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LOCAL EPILEPSY.

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PHYSICIAN TO CHARING CROSS HOSPITAL AND TO THE NATIONAL HOSPITAL, QUEEN SQUARE.

THE problem of epilepsy is of perennial interest to the neurologist, and the numerous discussions that have been recently devoted to it, and the various hypotheses on its nature and origin that have been advanced, indicate only too clearly our ignorance of its essential pathogenesis. I have chosen as the subject for this lecture Local Epilepsy, as I believe a study of the simple phenomena produced by irritation of the brain, all of which are closely related to symptoms of the major disease, may throw light on the nature of the latter. Few of these observations are original, but they have been lost sight of or neglected by many who have lately overladen the literature of this subject. Excitability is one of the essential functions of nervous tissue, and *irritation* is a convenient term for the inducing of local activity in it by abnormal or pathological stimuli, which are certainly unlike in nature as well as in origin those that normally excite it. The term *discharge*, originally used by Hughlings Jackson, may be applied to the immediate response to such irritation.

The symptoms of local irritation of the brain are generally, in contrast to those of destructive lesions, paroxysmal or episodal. All the evidence we possess goes to show that these symptoms occur only when the grey matter is involved, and never when the white matter is alone affected. Further, they appear mainly when the cerebral cortex is excited; we have no convincing evidence that they result from disease of the basal ganglia or of the grey matter of the brain stem or spinal cord, though epileptiform phenomena have been observed with disease and experimental excitation of the pons Varolii. Physiological observations also confirm this view; while electrical stimulation of the cerebral cortex can give rise to epileptiform attacks—that is, tonic or clonic muscular contractions which are at first local, but tend to spread to neighbouring groups of muscles—similar stimulation of the subjacent white matter produces isolated twitches only. The fact that if a local spasm has once occurred it is more easily elicited again, and that if it persists for a time it is followed by temporary exhaustion of the part of the nervous system that initiates it, also confirms this, for the cortex is exhaustible while the conducting fibres are scarcely, if at all, so, and it is a property of the cortex that the occurrence of any physiological event in it facilitates recurrence of that event. Many different forms of disease may excite these epileptiform phenomena; hæmorrhages, softenings, patches of encephalitis and meningitis, tumours, and many other such affections may be effective—in fact, any disease which borders upon or even invades, but does not destroy or reduce seriously the functional capacity of, the tissues from which the symptoms may arise. If these are destroyed or seriously damaged the symptoms no longer occur.

It is probably only from the simplest and more highly organised afferent or recipient, and efferent or motor cortical mechanisms that these phenomena can result, and they consequently always assume relatively simple forms. The local motor seizures which were first fully described and interpreted by Hughlings Jackson are due to excitation of the so-called motor area in the precentral gyrus, and consist in tonic and clonic spasms of groups of muscles; they never take the form of purposive or more complicated acts, for these depend on the elaboration by other parts of the brain of motion patterns in which the serial order of contraction of various groups of muscles, as well as the force, the duration, and the rate of the contractions are already prearranged. The precentral gyrus probably plays little or no part in the formulation of these, but merely transmits to the lower motor centres what we call volitional impulses in the order determined by these patterns. We may, in fact, compare it with the keyboard of a piano by means of which the notes when sounded together and in sequence according to a prearranged score produce music, but which itself plays no part in determining harmony, and when struck by fingers not guided by a music pattern produces only discord. A purposeless discord of movement characterises an epileptic seizure. It is true that more complex movements of a purposive type occur in epilepsies, but only in the states of automatism that succeed or replace a seizure, and it is improbable that these have a local origin. Similarly, the sensations excited by irritation of the sensory cortex and projected to the periphery of the body are always simple and crude; they neither give rise to the illusion of peripheral stimulation, nor secondarily to the performance of complicated acts. Excitation of the cortical areas of vision and hearing lead to similar simple perceptions only.

LOCAL MOTOR EPILEPSY.

We may now consider the symptoms produced by irritation of the motor and sensory regions of the brain and of those parts of the cortex that receive impressions directly from the organs of special sense.

Local motor epilepsy was, it is true, recognised and described by Bravais in 1827, but it was Hughlings Jackson who first associated it with disease of the opposite hemisphere of the brain; his observations on it threw the first light on the localisation and organisation of the cortical motor apparatus. It consequently bears, by universal consent, the title "Jacksonian Epilepsy," originally proposed by Charcot. The chief features of Jacksonian epilepsy are well known, but its study helps to explain some of the phenomena of the rarer forms of local epilepsy.

Electrical stimulation of the brain, which was first introduced by Hitzig and Fritsch and employed with such noteworthy results by so many of our countrymen, as Ferrier, Schäfer, Horsley, and more recently by Sherrington, Leyton, and Graham Brown, has confirmed and extended Jackson's original conclusions. It has revealed that in the cortex lying immediately in front of the fissure of Rolando there is a minute localisation, not rigid or even stable, it is true, of movements of the opposite side of the body. As the motor points are arranged in the cortex in a manner corresponding with the anatomical relations of the parts in which they initiate movement, a stimulus that spreads over the cortex excites a sequence of movements which spread or march in a more or less constant and regular manner from the segment of the body that is first convulsed. This is the essential feature of a Jacksonian attack; any chart of the motor representation of the cortex explains the march of the convulsions. The regularity of the march and the rate and extent to which the convulsion spreads depend on the nature of the excitation, and probably, too, on the local condition of the brain.

The attack can be divided into two stages: the first consists of clonic movements, sometimes preceded or accompanied by tonic spasm. These clonic movements frequently spread so slowly and remain limited to one segment so long that it is possible to study them carefully. They consist of brisk tetanic contractions of all the muscles that coöperate in the movement; when it is flexion of the elbow, for instance, the brachialis anticus, supinator longus, and often the long flexors of the wrist and fingers contract as well as the biceps. In the clonic stages there seems to be always a relaxation of the antagonist muscles, of the triceps, for example, when the elbow flexes. An interesting observation which I have been able to make repeatedly is that if the limb which is in clonic spasm is moved passively into the extreme position to which the clonically contracting muscles would bring it, the spasm ceases in these muscles and spreads to another set, generally to their antagonists. If, for instance, while there is

vigorous clonic flexion of the forearm, the elbow be flexed as far as possible, the spasm may at once shift to its extensors. This may be due to the new position altering the relative excitability of the cortical flexor and extensor points; Sherrington has pointed out how unstable these points are, and we shall find later that peripheral stimuli can influence the reactions excited from them.

The second stage is one of motor paresis following the clonic movements. This may vary in degree and duration; occasionally it is slight and transient, but when the spasms have been severe no volitional movement may be possible for a considerable time; even hours may elapse before power returns. Jackson, who observed this post-epileptic paresis in some of his earlier cases, accepted Todd's explanation that it is due to exhaustion of the cortical grey matter, a hypothesis that is now generally accepted. The paralysis is always flaccid and is accompanied by exaggerated reflexes, and by Babinski's sign if the leg is involved.

An interesting fact, not generally recognised, is that convulsive attacks are occasionally replaced by other manifestations, the most common of which is a sudden but transient paresis of that portion of the limb which in other attacks is involved in the clonic spasms. Usually the primary paresis appears in the part in which the spasms commence, but it may affect another region the cortical representation of which is adjacent to the site of discharge; in a case recorded by Hughlings Jackson, for instance, clonic movements of the face were immediately followed by paralysis of the hand of the same side. The following case is a good example of one in which at times defect or negative symptoms only occurred.

CASE 1.—The patient received a gunshot wound of his head in the region of the posterior end of the second left frontal convolution. Some months after being wounded he began to have epileptiform seizures of the Jacksonian type. All began with a clonic flexion of the right thumb and fingers, particularly of the index and medius. Within a few seconds all the fingers were involved in clonic flexion spasms, which then spread to the wrist, and later to the elbow. Many attacks ended at this stage, but in others the arm was abducted and protracted at the shoulder, the clonic twitching extended to the right side of his face, and jerked his head and eyes to the right. Each attack was followed by weakness of the right fingers and wrist which, according to his own story, varied with the severity and duration of the clonic spasms. No numbness, tingling, or other sensory disturbance accompanied the clonic movements.

Sometimes, however, attacks occurred in which there were neither tonic nor clonic spasms, or movements of any kind; he simply lost power suddenly and without any warning in the hand. If reading, his book might fall unexpectedly, or his cane might drop from his hand as he walked. The loss of power was complete for a time, but after a few minutes voluntary movement returned and gradually reached the normal.

I have seen several other patients with Jacksonian motor epilepsy who were subject to similar sudden transient palsies of the limb or segment of the limb in which at other times the convulsion commenced. The immediate cause of this palsy is doubtful. Higier, who described one case, suggests that in certain circumstances the cortical inhibition of the antagonists may predominate over the excitation. It is difficult to explain it by this hypothesis; it seems more likely that it is due to a primary inhibition instead of waves of excitation spreading over the cortical motor elements, a change perhaps similar to that which causes loss of consciousness in epilepsy and the sudden relaxations of the muscles leading to "falls," which often occur in it.

Such observations show that a local lesion producing a functional instability of part of the so-called motor cortex of the brain may, in addition to predisposing to local epileptiform phenomena, which are frequently followed by temporary loss of power in the convulsed part, be the immediate cause of such negative symptoms as a primary transient paralysis of regions of the body represented in its neighbourhood.

The cortical mechanisms of speech are frequently involved in right-sided epileptiform seizures, but invariably, I believe, in a negative manner. This is an important point, as it suggests that the functions of the more highly evolved cerebral mechanisms are arrested by factors which produce positive symptoms in less highly evolved mechanisms. In epilepsy the stream of consciousness is similarly arrested. In such seizures, as in general epileptic convulsions, the patient may emit an inarticulate cry or groan, but never a word or a series of sounds that can be regarded as symbols of thought, or which suggest in any way the expression of an emotion or idea. In many instances these sounds are due to forcible expiration or inspiration through the closed glottis. On the other hand, a complete or partial aphasia may accompany or follow the seizure. This aphasia is usually so transient that it is scarcely possible to analyse it fully even when the opportunity of observing it is offered. Sometimes the main difficulty is the utterance of words, but in other cases comprehension of speech and evocation of correct words to reply to a question or to express an idea are disturbed.

I have recently had several opportunities of observing such a temporary aphasia in a lady in whom a left-sided temporal tumour was removed four years ago. She has been recently subject to numerous epileptiform seizures, in many of which consciousness is not lost. These attacks often commence with a disgusting smell and an unpleasant taste; then she passes into an abnormal mental state similar to Jackson's "dreamy state," and the right side of her face may twitch. Though she remains conscious speech is completely lost from the commencement of the attack; questions and other stimuli evoke no response. As the attack passes off she utters unintelligible jargon sounds, and during the succeeding few minutes uses wrong words to express herself. The speech returns gradually and is normal again in from three to five minutes. During part of the attack she is unable to comprehend spoken speech.

FOCAL SENSORY EPILEPSY.

Focal sensory epilepsy has attracted less notice, perhaps since it is less commonly met with, but mainly because it does not present itself in such a striking and dramatic form to the observer, for it consists of purely subjective symptoms. It is not, however, rare, especially since the war has given us a large number of men with gunshot wounds of the head involving the sensory cortex.

Our knowledge of the limits and extent of the sensory cortex is less definite than of those of the motor area, but clinical observations, which are supported at least by experimental work, go to show that it lies wholly behind the fissure of Rolando. It is possible that the recognition of the position of our limbs in space may be partly subserved by the precentral cortex, but this is certainly not concerned with any other form of sensation. The occipitalward limit of the sensory area is still undetermined, but it probably extends as far as the supramarginal gyrus. That there is a localisation in the sensory cortex analogous to the motor localisation in the precentral area there can be no doubt; the lower limb is represented at and around the apex of the hemisphere, and the trunk, arm, and head in this order below it. This anatomical arrangement of the sensory representation of different parts of the body determines the mode of spread of the sensory phenomena which are excited by local irritation of the cortex and projected to the surface.

These vary in nature, but are generally described by the patient as numbness or tingling, or occasionally as a "deadness" or loss of feeling. These are all positive symptoms, by which I mean phenomena added to the normal state and due directly to overactivity of the corresponding parts of the cortex. This is generally true even of those sensations described by the patient as "deadness" or "loss of feeling," these being merely alternative terms for numbness, which is a positive phenomenon. A much rarer symptom is a sensation of movement; then the patient has the feeling that a part of the body, generally a segment of a limb, has moved in some definite direction, although there has been actually no displacement of that part. As far as I am aware, there is never the illusion of more complicated acts.

Two cases I have recently seen illustrate more common forms of focal sensory epilepsy.

The first, a man of middle age, was well in every respect until about two months before I saw him. Then one day, while sitting at home, he suddenly got a numb tingling feeling in his right great toe and on the inner aspect of the front of this foot. The tingling spread, at first slowly to his other toes, and then more rapidly up the leg, reaching almost as high as the groin. As the tingling progressed up his leg it diminished gradually in his foot and toes, leaving behind it a numbness, and probably an actual loss of sensation, which persisted nearly an hour. He had later a large number of similar seizures, all of which began similarly with tingling in the right great toe. In some the paræsthesiæ were limited to the leg, in others they spread up the right side of his trunk, and on reaching the shoulder passed down the arm to his fingers. In a few of the severer attacks he lost consciousness. In the slighter seizures there was nothing resembling clonic involuntary spasms, but the patient often moved the limb, or "squirmed it about," in a purposive manner, as if to relieve the disagreeable sensations. True clonic spasms of the leg did, however, occur in some of the attacks, due probably to spread of the discharge of the motor cortex. As he had other symptoms of a cerebral tumour he was operated upon and a growth was found beneath but close to the cortex of the upper parietal lobule. Its position here explains the onset of paræsthesiæ in his foot, while the anatomical arrangement of the sensory foci for the different segments of the limbs determined the mode of its spread.

The second case was one of gunshot injury over the lower part of the right parietal lobe. The patient was an intelligent man and gave a clear account of his symptoms. Immediately after the wound there was a considerable degree of weakness and of sensory disturbance on his left side, chiefly in the arm, but these had disappeared leaving only slight defects of the sense of position and of localisation in his left hand. Since the infliction of the wound he has been subject to left-sided attacks, which have become less severe and less frequent. They always begin with a tingling in the left two middle fingers which gradually extends to the other fingers, covers the whole hand, and slowly ascends the forearm, generally stopping at the elbow but occasionally reaching the shoulder. In some attacks tingling in the left side of his face sets in soon after it appears in the fingers, but it is never so intense as in his hand. No involuntary movements of the limb occur, but as the tingling spreads and becomes more intense the hand grows weak or even powerless.

This stage of the attack may last up to 15 minutes, but it is generally shorter in duration. It is followed by a "deadness" and "loss of feeling" in the hand and forearm, and on one occasion when I was able to examine him at this stage, I found complete loss of the sense of position in the limb, as well as great reduction of all forms of cutaneous sensibility up to the elbow. This gradually diminished from the elbow downwards, finally disappearing from the fingers in about half an hour.

In this case the periodic discharges, commencing by excitation of that portion of the sensory cortex where the fingers are represented, always spread up the post-central gyrus to the level of the representation of the elbow or shoulder, and sometimes down it into the facial area. Further, as in all such severe attacks, the paræsthesiæ were followed by actual loss of sensation. As Sittig has pointed out recently, the paræsthesiæ do not always spread from part to part in an order which corresponds strictly to the arrangement of the cortical representations of these parts, but this is true of some Jacksonian motor attacks too.

The post-paroxysmal loss of sensation presents many features of interest. Some years ago I saw a case with severe left-sided sensory epilepsy in which it was possible to study it carefully. The attacks always began with tingling in the left arm, sometimes so intense as to be actually painful, and then spread slowly to the shoulder, down the trunk, and into the left leg. In some of the attacks clonic convulsions of the same distribution occurred, but they always followed the tingling. As the paræsthesiæ spread to each segment of the limb sensation in it became dulled and finally disappeared, so that when the active phase of the attack was over the whole of the left limbs and that side of the trunk and face to a lesser degree, were completely anæsthetic to all stimuli. Sensation returned slowly and in the same manner after each attack I observed. First the anæsthesia began to recede from the middle line of the trunk towards the roots of the limbs; in the limbs cutaneous sensation returned gradually from the shoulder and hip towards the hand and foot. One surprising fact which I repeatedly observed in other cases too was that in the limbs the upper level of the anæsthesia was usually sharp, corresponding roughly to a circular line around the limb; at one moment, for instance, it might be limited above by a line around the elbow, and some minutes later by one equally sharp around the middle of the forearm.

These observations bring out some points of interest. In the first place, there is no definite evidence that the representation of the limbs in the sensory cortex corresponds to their anatomical segments; though in cortical hemiplegia there may be a greater disturbance of sensation in the hand and foot than in the arm or thigh, observations on the effects of destructive lesions of the cortex certainly never reveal such a sharp limit of the anæsthesia as is found after epileptiform seizures. In the second place, forms of sensation are lost with which the cortex has little or nothing to do. There may be, for example, total cutaneous analgesia or thermanæsthesia for a time, though the perception of pain and temperature is possible when the whole sensory cortex has been destroyed. We must consequently assume that physiological disturbances, which we may here again attribute to exhaustion of the grey matter, affects subcortical centres too, in this case probably the optic thalmus.

A few patients subject to focal sensory epilepsy have informed me that occasionally, and apparently independently of the characteristic attacks, the part usually involved by the paræsthesiæ may suddenly become numb or "dead," in other words, anæsthetic. In a woman with the symptoms of a tumour of the right parietal lobe, a sudden but transient loss of sensation in her left hand was one of the most prominent symptoms; I have not, however, had the opportunity of examining any patient while this disturbance was present. It is therefore obvious that focal sensory epileptic seizures present many close analogies with Jacksonian motor attacks. They begin locally and the spread of the sensory phenomena that constitutes them is determined by the topographical arrangement in the cortex of the representation of different segments of the body; they are usually followed by loss of sensation, and may be occasionally replaced by transient anæsthesia.

VISUAL EPILEPSY.

Attacks to which this term may be applied have been frequently observed. They have been well described by Gowers, who in his last paper on the subject recorded two cases in which I was able to observe the patients during several attacks. Since the war there have been more opportunities of investigating such attacks.

The cortical visual centres lie around the calcarine fissures, that in each hemisphere corresponding to the homonymous halves of the two retinæ and receiving therefore impressions from the opposite halves of the visual fields. It is definitely determined, too, that there is a detailed localisation in each cortical visual area, its posterior part corresponding to macular or central and its anterior part to peripheral vision, while the upper part of the area receives impressions from the lower part of the field and the lower from the upper. Perceptions due to the irritation of any part of the visual cortex are projected to the corresponding point in the field of vision, and consequently if the discharge spreads over the cortex the phenomena perceived appear to the patient to move through the opposite half of the binocular field of vision.

This can be illustrated by one of Gowers' cases in which I was able to observe the patient during many attacks, some of which lasted ten minutes or longer. They commenced with the appearance of several small spheres, white in the centre with an intermediate zone of blue and outside this a ring of red, immediately to the left of the point at which the patient gazed; from here they moved either at a uniform rate or in jerks to the left and downwards. As the patient remained conscious during the attacks he was able to indicate the position to which he referred them. When the spectra passed further from the fixation-point the colours disappeared from them. Almost immediately after their appearance vision in the left halves of the fields became dim and the loss quickly amounted to a left complete hemianopia which persisted for several minutes after the

attacks ceased, then disappearing gradually from the centre towards the periphery.

In all attacks the eyes deviated towards the left and the head turned in the same direction as soon as the visual spectra appeared. This deviation of the eyes and head was at first tonic but later became clonic; it could be controlled to some extent by the patient. In some of the attacks at least it was probably secondary to the visual spectra, the gaze being directed reflexly towards the point in space to which the spectra were projected. This man had in all probability a cerebral tumour, but its position in the brain was not determined. Gowers assumed that the symptoms were due to a lesion in the neighbourhood of the angular gyrus.

Gowers records in the same lecture another case, that of a girl, aged 9, who was under my observation for some years. She had been, since receiving an injury to her head at the age of 3½ years, subject to right-sided epileptiform attacks, most of which began with the appearance of a bright light in the right halves of her visual fields, which she spoke of as "twinkles," probably because it scintillated. Frequently there were colours in it. As soon as it appeared she invariably brought her hand to the outer side of her right eye "to rub it away." Her head and eyes turned slowly to the right, she lost consciousness, and developed tonic and clonic spasms in her right limbs. On regaining consciousness there was a defect of vision in each eye to the right of the fixation-point, occasionally a complete hemianopia which cleared up quickly. Mr. Sargent discovered a cyst, probably the result of a traumatic hæmorrhage, in the left angular gyrus, but it is possible that there were other lesions nearer the calcarine area.

Similar attacks of visual epilepsy have been frequently observed in men who had received gunshot wounds in the occipital region. Several such cases informed me that some time after the infliction of the wound, or on regaining consciousness after it, they saw light or stars though they were often temporarily blind. A study of visual phenomena associated with the later stages of such wounds is more instructive.

One of my patients was wounded over the pole of the right occipital lobe in 1916, as a result of which he has still a small left-sided paracentral scotoma, chiefly in the upper quadrants. Since being wounded he has been subject to fits, all of which begin with flashes of light to the left of his fixation-point, apparently just outside the scotoma. He describes the flashes as "shell bursts" or "balls of fire but redder than any fire," which dance about to his left; then vision to his left becomes hazy, everything seems to be receding into the distance, his left arm and later his left leg become numb and he loses consciousness. On one occasion on which I was able to examine him immediately after a seizure there was for a time a left-sided hemianopia.

In another man with a similar wound near the right occipital pole, the fits began with the appearance of very "bright lights of all colours" in the left of the point on which the eyes were directed. They grew brighter and brighter until he lost consciousness. He exteriorised these visual sensations so vividly that on a few occasions he assaulted nurses who came to his assistance, as he thought they were "flashing those lights in front of my eyes."

In a third man, who had a piece of metal embedded near the anterior end of the left calcarine fissure, the epileptiform attacks commenced with the appearance of a dull black patch which he referred to the lower part of the outer canthus of his right eye. Next flashes of lightning appeared in the same place and often persisted for 10–15 minutes. Simultaneously, or somewhat later in the severer attacks, his right limb became numb and powerless and he lost consciousness.

I have observed a large number of similar cases in all of which the traumatic lesion lay near and frequently injured the calcarine visual area. There seems, therefore, little doubt that these relatively simple and crude visual phenomena must be attributed to a discharge spreading over the receptive visual cortex. I have never seen them occur as primary phenomena in epileptiform seizures due to injury or disease of other portions of the brain. They may obviously result from discharges spreading back to the occipital cortex from the parietal or temporal lobes, but then they are preceded by motor or sensory auræ.

It is probable that purely negative phenomena may occur in patients subject to visual epilepsy; one man with a gunshot wound of the right occipital region informed me that while reading he sometimes lost his sight to his left side, and another, also with a right occipital injury, that while in a cinema he suddenly became unable to see to his left, but I have not had an opportunity of examining a patient during temporary primary hemianopia.

It is evident that irritation of the primary visual receptive area in the cortex produces symptoms closely analogous to those that result from similar excitations of the motor and sensory cortex—that is, simple phenomena which are projected into and often move through space, followed by loss of vision in the area they occupied, and sometimes replaced by a primary loss of vision.

Complex or highly organised subjective visual sensations do not result directly from lesions of the occipital cortex. Such have, however, been described in association with local cerebral lesions, and repeatedly with such as had involved part of the cerebral visual system. These are not, however, comparable to the phenomena which we are considering here. In some cases of hemianopia due to destruction of either the optic radiations or of the visual cortex, the patient states that he "sees" something present in the blind area of the field; some describe it as a "something" there; others state it resembles a familiar object, usually of simple form; in other cases it is identified with a human figure, but its presentation is always vague and its character so indefinite that it cannot be distinguished as anything known. Whatever form it takes, it generally persists a long time, usually until the patient's attention is diverted. These visual appearances are similar in nature to the hallucinations or imaginary visions which are not uncommon in the blind, especially those who have lost sight from disease of the optic nerves or tracts.

More complicated subjective visual phenomena are frequently associated, as Hughlings Jackson originally pointed out, with local lesions in the neighbourhood of the uncus of the temporal lobe, but they are different in origin and nature to those we are studying. I refer to them here only for purpose of contrast.

These uncinate epileptic seizures frequently begin with subjective smells and tastes, which are almost invariably of an unpleasant, usually of an extremely disagreeable, character; often there is, too, an epigastric sensation which may amount to actual nausea. Then comes that peculiar mental state which Jackson called the "dreamy state" or "intellectual aura," characterised by a feeling of unreality of the present or of familiarity with the events of the moment as though they had been experienced before. Often visions which the patient associates with the past come up. A patient whom I had under observation always saw, in this stage, a woman with a red cloak approaching nearer and nearer until, as the spectre reached her, she lost consciousness. In other cases, the vision may be a scene tinted with a tone of familiarity, a building or a similar object. In such cases the visual hallucinations, for to these the term hallucination can be applied, is only part of the intellectual aura of Jackson and is obviously the result of more complicated cerebral and psychological processes than the perception and projection of lights or colours.

It is difficult to suggest why it is only from the temporal lobe, and generally only by lesions involving directly or indirectly the olfactory (and probably the gustatory) centre in the uncinate gyrus, that these complex mental states with highly organised visual phenomena are excited; possibly the explanation may be found in the fact that this region of the brain, which belongs to the rhinencephalon, represents the phylogenetically oldest portion of the cerebral cortex, and that even in man it still serves as a storehouse of simple memories and associations.

AUDITORY EPILEPSY.

The only other sense discharges excited by focal irritation of the brain that may usher in or even constitute an epileptic attack are subjective sounds or other auditory phenomena. These are relatively rare and in nature less striking and characteristic than the motor, sensory, visual, and even than the olfactory and gustatory phenomena, to which I have already referred.

I have met some interesting examples of this phenomenon. A man, who during the war had

received a penetrating gunshot wound in the right side of his head, later became subject to epileptic fits. Most of these began with a sound like the ringing of a bell in or outside his left ear. This noise became louder and louder until he lost consciousness. In many of the later attacks, however, there was no loss of consciousness, and only local convulsions beginning with turning of the head and eyes towards the left. I have never the opportunity of observing one of these seizures or examining him immediately after one, but the patient, who was an intelligent man, never noticed any loss or disturbance of hearing at the end of either a local or general attack. The explanation is that neither cortical auditory area receives exclusively impressions from either ear, and therefore even complete functional paralysis of one does not produce any obvious defect of hearing in either ear.

These various epileptiform phenomena, all of which are characterised by continuous (tonic) and intermittent (clonic) manifestations which spread over the body, or are projected through space in a manner determined by the anatomical representation in the brain of the parts of the body and of relative space around it, result directly from what we may still, following Hughlings Jackson, call a "discharge" in the cerebral cortex. Both clinical and experimental evidence is strongly in favour of this view; physiological experiments show that though movements and probably sensations may be excited by electrical and other forms of stimulation of the white matter, these do not outlast the stimulation, they do not tend to spread and are not followed by any evidence of exhaustion or facilitation, all of which may be seen on stimulation of the cortex, and observed in epileptiform attacks arising from it.

Two factors are necessary that attacks may occur; an adequate state of excitability of the cortex and a structural lesion or state of functional instability which predisposes to a discharge in it. Jackson regarded the discharging lesion as a fulminate which may explode neighbouring or associated healthy nervous mechanisms. The actual nature of the lesion has probably little influence, though one that increases slowly in extent and severity is usually more effective than one that is stationary. It is not necessary that the lesion actually involves the region of the cortex in which the discharge is excited; it is frequently effective if it merely lies in its proximity. When, however, it does extend into the discharging cortex, it is essential that it does not destroy its anatomical integrity, or interfere seriously with its functional capacity.

It is probable that the presence of a lesion in the neighbourhood of the cortex raises its excitability in addition to acting as a discharging focus; it may be, in fact, wholly to this raised excitability and instability that the discharges are due, for it has been shown experimentally that if in animals a part of the motor cortex is damaged by incisions, corrosive fluids, or other means, convulsions may be excited from it or its neighbourhood by much smaller doses of strychnine and cocaine than are effective in the intact animal. The level of cortical excitability may be of course influenced by other factors; we know, for instance, that alcohol, excitement, and in ordinary epilepsy possibly disturbances in the endocrine functions, increase the liability to attacks, while it can be diminished by certain drugs, as bromides.

Influence of Peripheral Stimuli.

An interesting matter that has received little attention is the influence of peripheral stimuli in exciting local attacks in that part of the body that is stimulated. Many patients subject to Jacksonian epilepsy commencing in one hand, for instance, are careful to shield this hand from injury or stimulation of any kind, and they frequently attribute a seizure to some irritation or accident to it. This evidence may not carry much weight, since it is the way of all patients to find an obvious explanation of their symptoms. Some years ago, when investigating with Sir H. Head the disturbances of sensation produced by cortical lesions, I was struck by the fact that during the prolonged examination of tactile and other forms of cutaneous sensibility over one hand, Jacksonian spasms occasionally commenced in this part in patients with cortical lesions not subject to frequent attacks. Some patients recognising this were reluctant to submit to examination. I have frequently repeated this experiment since, and have been able, in certain cases, to induce typical local spasms in a hand or foot by repeated stimulation of it. The most effective means is usually a long or regular series of tactile contacts with a wisp of cotton-wool, a camel's hair brush, or von Frey's hairs. The attack induced usually commences with a few clonic movements, or a curious purposeless restlessness, and may extend no further if the stimulation is stopped; sometimes, however, they spread and may involve the whole of one side of the body. These movements start almost invariably in the part that is being tested; I have seen them more frequently elicited in the hand and fingers than elsewhere, probably because it is here that sensation is usually subjected to the most searching examination. As long ago as 1863 Hughlings Jackson described a case in which touching the thumb would sometimes bring on a fit, and later another case in which seizures followed testing for ankle-clonus. He also cites an observation of Brissaud's that percussion of the patellar tendon excited local epileptic attacks.

In a few cases no movements occur, at least as primary phenomena, but the patient complains that the stimuli employed have suddenly excited in the area tested a numbness, a tingling, or other paræsthesiæ, apparently identical with those that occur in sensory epilepsy. These may remain local or spread, and may or may not be followed by motor spasms. I have seen one patient at least whose hand after a prolonged examination of sensation suddenly "went dead" and became so anæsthetic that further testing of sensation was impossible. It is probable that the sudden variations in sensibility occasionally met during the examination of sensation in patients with lesions of a parietal lobe are due to a palsy of cortical function brought about by stimulation.

I have also seen a few men with gunshot wounds in the neighbourhood of the motor cortex who asserted that long continued use of the hand of the side opposite to that on which the wound was tended to excite local spasms or seizures beginning in that hand. We have some experimental confirmation of this, for Sauerbruch found that if the paw of a monkey was flexed and extended passively for a long period local spasms were excited in it by the injection of a dose of cocaine so small that it had no effect if the animal had been at rest, or if its paw had not been submitted to passive movement.

Some men subject to epileptiform attacks commencing with visual phenomena owing to gunshot wounds of the occipital region have told me that bright lights, cinema exhibitions, and other strong retinal stimuli tend to bring on attacks. Auditory stimuli may also excite attacks which commence with auditory auræ. A man who consulted me some time ago had been subject since an accident to his head to epileptic seizures which commence with a sound like the note of a high-pitched bell in his left ear; he is convinced that any loud noise may bring on an attack, and has consequently given up his profession and retired to a quiet country place, where the seizures have been much less common. And some months ago I saw in the National Hospital a woman, under the care of my colleague Dr. Risien Russell, who was subject to left-sided motor and sensory attacks, some of which commenced with a noise or a musical tune. In her case, too, epileptiform attacks were brought on by loud noises. Later a tumour was removed from her right temporal lobe.

There is therefore a certain amount of evidence that the peripheral stimulation of a limb which is subject to motor or sensory epilepsy, or of a sense organ to which analogous phenomena are referred, may excite epileptic symptoms if the corresponding part of the cortex is in an unstable state. The explanation is

probably that the inflow of a large mass of sensory impressions to the cortex raises its excitability and consequently makes it more liable to discharge if it is in an instable state owing to the existence of injury or disease. Possibly this enhanced excitability of the cortex by peripheral stimuli in abnormal amount may explain the "reflex epilepsy" of which Brown-Sequard and his successors wrote so much, but it must be admitted that the justification of this term is seriously questioned to-day.

Another interesting fact is that local spasms of cortical origin can be sometimes arrested by various devices applied to the part where they commence. Many patients subject to Jacksonian epilepsy assert that they can prevent a certain number of their attacks from spreading by various means; since the days of Galen some have relied on a ligature around the limb which can be pulled tightly when the attack begins; others find that checking the spasms passively by seizing the part convulsed is more effective; others attempt to arrest the convulsions by strong volitional innervation of the antagonistic muscles, while some resort to vigorous sensory stimulation, as slapping the part with a hand or plunging it into cold water. How these measures act it is difficult to say; it may be that they excite an inhibition of those portions of the cortex at and around the point where the discharge is commencing. There is, however, no doubt that portions of the cerebral cortex from which epileptic phenomena can be elicited may be so influenced by stimulation of corresponding parts of the periphery of the body that discharges result, or on the other hand that discharges commencing are checked.

These phenomena of local epilepsy which result from excitation, exhaustion, and inhibition of an area of cortex in a state of functional instability belong to a relatively simple physiological level. But they are all closely related to features of ordinary epilepsy, in which factors of the same order acting at a higher physiological plane where discharges of positive and negative nature may spread more quickly and more widely help to explain the origin and many of the characters of the seizures.

PSYCHOGENIC ASTHMA.

A RECORD OF TWO CASES.

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THERE has never been unanimity of opinion regarding the pathogenesis of asthma. Until recent years the condition was commonly regarded as a "reflex neurosis," and radical therapy consisted in the search for, and removal of, obstructions to respiration and other foci of irritation. To-day it is usual to regard asthma as an expression of protein hypersensitivity, and it is grouped in text-books with hay-fever, urticaria, and other anaphylactic phenomena. The protein-idiosyncrasy theory of asthma is held so strongly by one authority that he is unwilling to accord ætiological significance to any other factor.

The two cases, sent to me by Sir Charlton Briscoe, which are briefly described, here suggest that such an exclusive view might be modified. The cases are quoted as exceptional, and their citation should not imply that the writer regards asthma as a pure psychoneurosis. Asthmatic attacks are clearly brought about through the agency of the vegetative nervous system. In many cases the disturbance is initiated by a biochemical stimulus; in others, it is suggested, the disturbance is to be sought for at the psychological level. Similarly, recent work has shown that attacks which are clinically indistinguishable from so-called *true* epileptic fits can be the expression of mental conflict. Furthermore, it is a commonplace of clinical observation that even in those cases of asthma in which protein idiosyncrasy can be clearly demonstrated mental stress can precipitate the attacks. With regard to the two cases here described, it is of interest to note that two different forms of technique were employed in their psychological investigation, neither of which involved psycho-analysis in the Freudian sense; and that in neither case was the psychogenesis traced to the sex-instinct.

CASE 1.—A boy, aged 12 years, who had suffered from asthma preceded by feelings of restlessness for nine years. During the period October, 1921, to January, 1922, which was spent in hospital, he had had no attacks and had put on weight, but he had at once relapsed on returning home. Physical examination revealed nothing abnormal. It was difficult to win the boy's confidence, and psychotherapy met at the beginning with considerable suspicion and resentment. Hypno-analysis was the psychotherapeutic method chosen in this case. Although resistant at first, he proved to be an excellent hypnotic subject, and was eventually able under hypnosis to recall, and in fact to re-experience, his past birthdays as far back as his second birthday. His manner and vocabulary were always appropriate to the period of life under recollection.

The investigation showed that the asthmatic attacks centred round the emotion of fear and the idea of suffocation. Under deep hypnosis the following repressed traumatic memories were vividly recalled, and by suggestion subsequently restored to consciousness. He remembered that at the age of two his nurse used to silence his cries by stuffing pieces of rag into his mouth. She told him that if he were a naughty boy a man would come and take him away in a sack. She used to beat him with a broom and sometimes locked him in a dark coal-cellar, which was stuffy and full of cobwebs. Another incident recalled under hypnosis, which occurred at the age of two, but which seemed to have little direct bearing on his asthma, was falling off a fence and being picked up by his mother who thought he was dead. This story was corroborated by his mother. The relation of these experiences was accompanied by much pantomime and a considerable display of emotion. Upon their restoration to consciousness asthmatic attacks ceased to recur. I saw him on six occasions, with intervals of one week between periods of treatment, which lasted for about an hour.

CASE 2.—A woman, aged 31 years, a school-teacher, had suffered from recurrent bronchitis since the age of 9. Asthma was diagnosed by her doctor at the age of 17. Her severe attacks usually occurred in the summer months, but she was subject to bouts of dyspnœa whenever she was at home. For one period of two years' duration she enjoyed a complete remission from asthma; this period corresponded with her regular attendance at the confessional (she was an Anglo-Catholic, and had found a sympathetic confessor for the time being).

Her attacks occurred at night and were invariably preceded by the following dream: "I find myself by the side of a brook, quite close to my home. The brook overflows and engulfs me. When the water reaches my neck, I awaken into an asthmatic attack." She had dyspnœa for about three hours following the attack, but usually managed to get to sleep again at about 5 A.M. Her attacks, which were typical attacks of spasmodic asthma, were sometimes followed by bronchitis; in any case she usually had to stay away from school for about three weeks suffering from cough with copious yellow expectoration. She remembered having at the age of three fallen into a stream from which she was speedily rescued, and she was subsequently put to bed for the rest of the day. She occasionally had claustrophobiac dreams, and at times suffered from slight claustrophobia in waking life. Temperamentally she is a cyclothyme, "always either up in the clouds or down in the dumps."

Physical examination showed a left-sided deflection of her nasal septum and large tonsils. Her respiratory movements were of the thoracic type, with deficient use of the diaphragm in inspiration. Otherwise there were no physical signs. In the course of the "therapeutic conversation" the latent meaning of her recurrent dream became clear. The interpretation, which she accepted with conviction, provided a satisfactory explanation not only of her dream but also of the asthmatic attacks. It is important to stress the fact that the revealed conflict for which the asthmatic attacks sought to provide a solution in symbolic form was a current one and unconnected with the patient's sexual life. The writer saw her on only one occasion for about one hour in February, 1925. Since her "analysis" she has had no return of asthma according to her letter of Feb. 27th, 1927.

These two cases show that it is always worth while to consider the psychological side of asthma. In Case 1 there was no obvious cause for the condition. In Case 2 there were three factors: (*a*) bronchitis; (*b*) enlarged tonsils; (*c*) a deflected nasal septum, which might have been regarded as causal, and to the elimination of which treatment might have been exclusively—and fruitlessly—directed.

TUBERCULOSIS OF THE LARYNX AND ARTIFICIAL PNEUMOTHORAX.

NINE CASES; COMPLETE HEALING IN SIX.

(From King Edward VII. Sanatorium, Midhurst.)

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AND
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Laryngeal Tuberculosis and General Prognosis.

IT has long been recognised that secondary infection of the larynx is more frequent in advanced cases of pulmonary tuberculosis. When it occurs in earlier cases, or in those with limited chest lesions, experience teaches that this complication generally indicates either a severe type of infection, or a lessened degree of resistance, or both. There is rarely an exception to this principle, particularly if tubercle bacilli are present and persistent in the sputum. In "closed" cases—i.e., from free T.B.—on the other hand, the laryngeal lesion is always less alarming and the prospect is less dark.

The influence of a laryngeal lesion in rendering the general prognosis more gloomy has been demonstrated by previous investigations made in this sanatorium.[1] Briefly stated, these showed that 75 per cent. of all laryngeal cases seen here were dead within five years, and that of three patients with a throat complication two were dead within a period when, after the same lapse of time in purely pulmonary cases, two out of three patients would still be alive.

Local Treatment.

At the present time, after 16 years' experience, the chief local measures on which we have been led to rely are voice rest and the galvano-cautery. The first is always beneficial. But strict silence can only be counted on for complete cicatrisation in a limited number of cases. Out of 477 laryngeal cases it was only thought worth insisting on in 67 cases. Of these 23 were cured (=34·3 per cent.). So, also, the cautery was only deemed suitable in 74 cases, though it effected a cure in no less than 46 of them (=62·1 per cent.). Both methods, separately or combined, take many months, and though they may fulfil the Hippocratic principle of healing *tuto*, they can neither of them claim to be *cito et jucunde*.

Artificial Pneumothorax.

We therefore welcome any further measure which promises to meet these two desirabilities. Artificial pneumothorax (A.P.T.), in the treatment of suitable cases of pulmonary tuberculosis, has become a well-established measure, with daily increasing experience as to its indications, limitations, and results.

Some References to the Literature.

The published references concerning laryngeal tuberculosis and pneumothorax are not numerous. This may be because the regular examination of the larynx in all chest cases has not yet become an established routine, or because, as above-mentioned, a laryngeal lesion always means a more severe infection and hence the number of such cases (pulmonary and laryngeal) suitable for treatment by artificial pneumothorax cannot be large. It will also be realised that such cases cannot be very numerous, as they are restricted to those with a unilateral lung lesion, or, at most, with only a trifling invasion of the other side. Riviere says that laryngeal tuberculosis is no contra-indication unless far advanced, and even then a doubtful one.[2] Burrell agrees that "tuberculous laryngitis is no contra-indication and is usually improved by the treatment."[3] Dumarest and Brette have noticed that the laryngeal condition is never aggravated by this treatment, that it is generally improved, and that, in any case, it renders the larynx more favourable for local treatment.[4] The experience of Swezey and Schoubar is that only acute tuberculous lesions in the larynx contra-indicate pneumothorax treatment.[5] Legourd has had experience of 56 patients with active laryngeal tubercle in 300 cases treated with pneumothorax. He considers it a precious addition to our treatment; never regards it as a contra-indication; and, on the contrary, thinks that the laryngeal lesion should urge us to lose no time but rather to employ it promptly in suitable cases.[6]

Clinical Records.

The following cases have been long and carefully observed. In all of them tubercle bacilli were present; the laryngeal lesions were definite and progressive; in five of them rapid healing followed the collapse of one lung; in the sixth case the addition of local treatment with the galvano-cautery secured cicatrisation.

CASE 1. *Male, aged 23, both cords bright-red, abraded, and ulcerated. Improvement within a month of A.P.T., and quite healed within two months.*—Had been husky for two months when admitted on April 4th, 1926, with a shallow ulcer over each vocal process. He had a very active lesion of the left lung; his temperature (rectal) on absolute rest ranged between 98° and 100·6°; he looked very ill, and the prognosis was regarded as grave, particularly because, in spite of rest in bed and strict silence, the laryngeal mischief increased rapidly, so that a month after admission the note was: "Both cords are now bright-red, abraded on the surface and with early, superficial ulceration along the free margin of the posterior half on each side. There is a deeper, triangular ulcer over each vocal process." (Fig. 1.) Within a month of the A.P.T. (performed May 21st, 1926) the note made was "difficult to see any lesion." Within two months the cords were intact, but still pinkish, and the patient was allowed to talk. A month later it was noted that "the cords are no longer pink, but quite white and flat. There is a little *coup d'ongle* scar over the left cord posteriorly." (Fig. 2.)

Development of Laryngeal Tuberculosis after Admission to Sanatorium.

By systematically examining the larynx of every patient admitted to Midhurst, even if he had no huskiness or any other symptom referable to that organ, it was found, during the 10 years from 1912 to 1922, that amidst 2070 who passed the first inspection as normal, six cases developed laryngeal lesions after admission. Such a small proportion, once a patient is within the shelter of a sanatorium, is noteworthy. Of these six cases four are dead, one is reported as very ill, and only one after ten years writes that he is alive and well.

These observations (published in 1924), though few in number, prompt the hypothesis that, when laryngeal tuberculosis does develop after a patient has started sanatorium life, the prognosis is not good. It suggests a want of response to the favourable conditions, or a severe infection. Hence, the following three cases are particularly interesting as showing the value of A.P.T., for in each of them the laryngeal mischief only started after the patient's admission to the sanatorium.

CASE 2. *Male, aged 18, laryngeal tuberculosis developed in sanatorium. Four months under observation and silence, without improvement. Larynx healed within three months of A.P.T.*—Admitted on Sept. 30th, 1925, with early signs at both apices. These remained stationary on the right side but extended on the left. At the end of five months' treatment his temperature was never satisfactory. His larynx was passed as "normal" on admission, but a month later, when his persistent temperature had confined him to bed, he became husky and it was found that there was interarytenoid crinkling and both cords were pink, abraded, and congested, particularly along their attached border. (Fig. 3.)

[1] StClair Thomson: Tuberculosis of the Larynx, Ten Years' Experience in a Sanatorium. Medical Research Council, 1924. Tuberculosis of the Larynx: its Significance to the Physician. The Mitchell Lecture, Brit. Med. Jour., Nov. 8th, 1924.

[2] Clive Riviere: The Pneumothorax Treatment of Pulmonary Tuberculosis, Oxford Medical Publications, London, 1917.

[3] L. S. T. Burrell: Report on Artificial Pneumothorax, Medical Research Council. London, 1922, p. 14.

[4] F. Dumarest and P. Brette: La Pratique des Pneumothorax Thérapeutique. Paris: Masson et Cie, deux. l'édit., 1923, p. 210.

[5] American Rev. Tuberc., 1926, xiii., 156.

[6] Rev. Gén. de Chir. et de Thérap., 1921, xxxv., 694–696.

He was put on silence for seven months without improvement. But a month after the A.P.T., while still in bed, the larynx was noted as "statu quo"; a month later it was "catarrhal," and at the end of three months the note was made "quite healed, to talk."

CASE 3. *Female, aged 24, tuberculosis of larynx developed two months after admission. Three months' observation, under silence, but disease extending. Improvement within a month of A.P.T., and at the end of third month larynx healed.*—Admitted on June 19th, 1924, with active signs throughout left lung, while X rays showed soft shadows under clavicle on right side. Temperature within normal limits, was irregular, and she was never fit for exercise. Two months after admission all the right cord and the anterior third of the left was superficially ulcerated. (Fig. 4.) The sputum was still positive when A.P.T. was performed on the left side on Oct. 24th, 1924. A month later there was "clean ulceration of all right cord and ulceration of anterior third of left." Two months later the temperature had become normal, and the three months' silence was abandoned, for both cords were healed, although still pinkish, and the right one was irregular in all its extent. Five months after the A.P.T. the voice was restored to normal and the larynx showed no trace of disease.

The next case (Case 4) is particularly interesting for the following reasons: (1) it was the most extensive which, so far, has been successful; (2) it developed in the sanatorium; and (3) after six months there the patient was discharged as "worse." It was later on that A.P.T. was carried out by Dr. L. Burrell, to whom we are indebted for permission to publish his record of the case.

CASE 4. *Male, aged 37, laryngeal tuberculosis developed one month after admission. Extensive disease. Discharged "worse." Complete healing.*—Admitted on July 29th, 1922, with signs throughout the left lung and at the upper apex of the right. The evening temperature (mouth) ran regularly to 99°. A month afterwards he became husky and a grey-yellow, irregular ulceration was seen on the inner margin of the posterior third of each cord. This extended until eight months later there was extensive ulcerating, stalactite deposit over all the interarytenoid space and ulceration of the posterior half of both cords. (Fig. 5.) While in the sanatorium he gained 14 lb. in weight, but his evening temperature (mouth) remained at 99°, the sputum was an ounce a day, and he was never fit for any exercise.

He was not seen again for nearly three years—i.e., not between May, 1923, and Feb. 28th, 1926. It appears that after leaving the sanatorium in 1923 he passed under the care of Dr. Burrell, who induced an artificial pneumothorax on April 12th, 1924. When the patient presented himself to us again on Feb. 28th, 1926, he was still whispering. (N.B.—He had never been put on strict silence as the condition was looked on as too hopeless to be worth it.) We were astonished to find both cords completely healed, while a large but limited fibroid deposit, without any superficial ulceration, occupied the centre of the interarytenoid region. (Fig. 6.) Five months later this fibrosis had diminished to an even, flat band of scar tissue across the lower part of the interarytenoid region, on a level with the cords. (Fig. 7.) The patient had not quite succeeded in regaining the normal use of his sound cords; he had whispered so many years with his ventricular bands (*Taschenbandsprache*, as they call it in Germany) that he found it difficult to discontinue the habit! At the present moment his general medical condition is reported to be excellent; good fibrosis; no symptoms except a little cough and occasional sputum which no longer contains T.B.

Artificial Pneumothorax is not Sufficient in all Cases to Effect a Cure.

It will be noted that in three of these cases the healing of the laryngeal lesion was rapid—a matter of one to three months. In one case (Case 4) it is difficult to say how soon the extensive disease began to heal. But we must be prepared for cases in which the induction of an A.P.T., though helpful, is not sufficient without other (local) measures. In the following case the disease in the larynx persisted for one and three quarter years after the lung had been collapsed, and in spite of prolonged silence, and then rapidly yielded to the galvano-cautery.

CASE 5. *Male, aged 18, laryngeal disease present on admission, but extending after A.P.T. No improvement at end of 21 months, in spite of silence. Healed in six months with three cautery treatments.*—Admitted April 6th, 1923, with T.B.+ and an ulcer over right vocal process. A.P.T. on 24th, but, in spite of this, during the next six months the laryngeal mischief increased until there were grey, ulcerating, indolent deposits over each vocal process and the posterior half of both cords. This condition persisted throughout 1924 in spite of silence and every care on the part of the patient. Consequently, galvano-cautery treatment was started in 1925, and he had three applications in January, April, and June. By August the larynx was quite healed and he was allowed to talk, after more than two years of voice rest. It has remained healed. He has no cough and no sputum. He still has refills, but his general condition is excellent, and he gains his livelihood as a book-keeper.

FIG. 1.

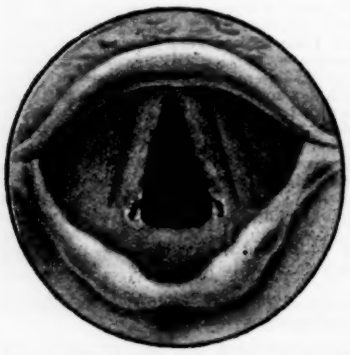

FIG. 1.—The larynx in Case 1 showing abraded and ulcerated cords.

FIG. 2.

FIG. 2.—The larynx in Case 1, quite cicatrised three months after A.P.T. Note the scar over left vocal process.

FIG. 3.

FIG. 3.—The larynx of Case 2, not improved with seven months of silence. A.P.T. was followed by complete healing of larynx within three months.

Development of Tuberculosis of the Larynx after Admission to Sanatorium, and after Induction of Artificial Pneumothorax.

In their excellent book [7] Dumarest and Murard remark on the extreme rarity of the development of tubercle in the larynx, once the pneumothorax has been instituted. A well-known American laryngologist states: "I have never observed laryngeal tuberculosis develop in the course of treatment, nor did I ever see this complication occur subsequently in a patient cured or arrested by means of an artificial pneumothorax." [8]

We, however, have had two cases in which this secondary infection did occur, though it was of slight extent and, in one instance, soon cleared up on the added prescription of voice rest.

CASE 6. *Female, aged 20, laryngeal tuberculosis developed one month after A.P.T., but rapidly subsided under silence.*

[7] Op. cit.

[8] Julius P. Dworetzky: Annals of Otol., Rhinol., and Laryng., 1926, No. 1, xxv., 42.

Complete recovery.—Admitted March 19th, 1923, with a normal larynx. T.B.+. A.P.T. on May 2nd. In June huskiness called for an examination of the larynx, when the cords were found to be congested, succulent, and rounded, with a trifling interarytenoid deposit. Under strict silence this subsided in a month. The larynx has remained normal since—i.e., for more than three years. The patient has lost all cough and sputum; general health is good, but refills are still considered advisable.

FIG. 4.

FIG. 4.—The larynx of Case 3. Disease extending in spite of silence. Complete healing took place within three months of A.P.T.

FIG. 5.

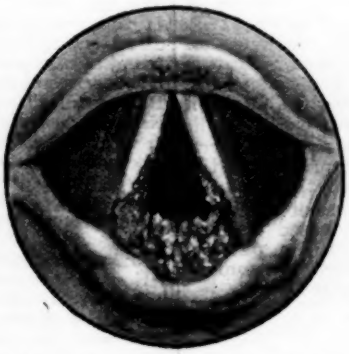

FIG. 5.—Extensive disease in larynx of Case 4.

FIG. 6.

FIG. 6.—Larynx of Case 4 subsequent to A.P.T.

CASE 7.—We have another case still under treatment which may require the cautery. It is that of a female, aged 32, admitted on March 9th, 1926, with T.B.+ and the larynx normal. A.P.T. was performed on May 18th. In October she became conscious of her throat and each vocal process was found to be "catarrhal and infiltrated, with small yellow spots, worse on the left." These broke down into ulcers. By December (and with the addition of silence) the larynx on the right side had quite healed, but on the left side it remains in statu quo. If this does not soon cicatrise spontaneously some treatment with the cautery will almost certainly ensure a cure.

It will be noted that this is the second case in which tuberculosis in the larynx not only developed after admission to the sanatorium, but after the induction of artificial pneumothorax.

Failure.

In still a third case tuberculosis developed after admission to the sanatorium and after the performance of an A.P.T., but the patient succumbed.

FIG. 7.

FIG. 8.

FIG. 7.—Larynx of Case 4, five months later to condition shown in Fig. 6.

FIG. 8.—Larynx in Case 9. This healed within two months of A.P.T. But collapse of lung was not complete; T.B.'s persisted in sputum, and larynx relapsed four months later.

CASE 8. *Male, aged 24, development of tuberculosis in larynx three months after admission and two months after A.P.T. Death two years later.*—Admitted Oct. 7th, 1921. T.B.+. Larynx normal. A.P.T. on Nov. 30th, 1921. Two months later developed ulcerating, stalactite deposits in interarytenoid region, and an ulcerating deposit on the petiolus of the epiglottis. There were never any signs of improvement. He was discharged on April 20th, 1922, and died on Dec. 9th, 1924.

Relapse.

Tuberculosis in the larynx and in the lung may recover coincidentally, or progress pari passu. It has been shown that so long as the disease in the larynx is advancing, the lesion in the lung cannot become arrested.* But the reverse is quite possible—i.e., tuberculosis of the larynx may become healed while in the lung it continues unarrested or is even progressing. We have records of many cases where tuberculosis in the larynx was healed and remained healed until the patient died, many years later, from his pulmonary disease. But these cases of cure in the larynx may relapse if the tuberculosis in the lung is still active. Even a pneumothorax will not insure against this, as the following case will show.

CASE 9. *Female, aged 24, slight laryngeal disease, but not yielding to six months' silence. Healing in seven weeks after A.P.T. Collapse of lung never complete. T.B.'s persisted. Relapse of larynx four months later.*—Admitted Sept. 19th, 1925, with infiltration of upper half of right lung. A month later she developed a right basal pleurisy. She had been hoarse six months and had kept silence for four months before entering Midhurst with a diffused, abraded, interarytenoid deposit (Fig. 8). After two more months of silence the condition remained stationary. Within seven weeks of the A.P.T. the larynx was healed and she was allowed to talk. This larynx remained soundly cicatrised during the nine subsequent months we thought it wise to detain her in the sanatorium.

Her stay in the sanatorium was prolonged through these months because she never had a complete collapse of the lung; it was held up at the base by the pleurisy described above. Besides, she had been admitted with a negative report as regards her sputum, but we found T.B. present after a stay of two months, and they persisted in spite of treatment and progress. However, as her general condition had improved, and the larynx was healed, she was allowed to return home after a sojourn of 11 months. Four months later she again became husky; there was much laryngeal catarrh, and this time there was not only a small interarytenoid deposit but both vocal cords were pink and rounded with ulcerating deposit over each vocal process. T.B.'s are still present; the general condition remains as satisfactory as on discharge; the left lung continues free, but the right is rather over-collapsed, possibly owing to recent refills being

* StClair Thomson: Op. cit.

carried out at too frequent intervals. She is shortly returning for further treatment at Midhurst.

Conclusions.

Cases of pulmonary tuberculosis are always rendered much more serious by the addition of a laryngeal extension.

This laryngeal complication is of still worse augury if it develops after admission to a sanatorium or after induction of an artificial pneumothorax.

In spite of this experience, the presence of tuberculosis in the larynx is no contra-indication to this operation. On the contrary it may speedily effect a cure or render more promising the addition of galvano-cautery or other treatment.

The larynx can be cured by this measure, even although bacilli may continue to be present in the sputum and mischief to be detectable in the chest.

The indications for the induction of artificial pneumothorax must, primarily, be based on the pulmonary and general condition of the patient. So far as the larynx is concerned the only contra-indication would be an acute, miliary invasion.

THE RESULTS OF OPERATIONS FOR GASTRO-DUODENAL ULCERATION.

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THE reader who pursues this communication to the end may reasonably ask why such a small series has been recorded and what indeed is the worth of any deductions based upon the observation of small numbers of patients. Conversant with the literature of the subject, he will have in mind the large series published in America from the Mayo Clinic, in England by such masters of surgery as Moynihan, Sherren, Paterson, and Walton, in Central Europe, where the disease has been exceptionally rife since the closing years of the Great War, by von Haberer, Finsterer, Clairmont, and others. But he will also have a vivid memory of the discordant conclusions arrived at by the several observers, and he will find it very difficult, by the study of these published clinical records, to formulate any line of action in the treatment of gastro-duodenal ulceration which he can follow with any confidence in the rectitude of his decision. It becomes, in fact, a matter which must, to a large extent, be adjudged individually by each surgeon who essays to treat such patients. The experiences of operators who are in a position to practise different methods and compare them are more valuable than massed statistics in which a number of surgeons are concerned, because certain sources of error in compiling them are eliminated. Though restricted numbers of patients are dealt with it is maintained that a truer estimate of the relative worth of different procedures is obtained. Of 130 patients suffering from chronic gastric or duodenal ulcer (61 gastric, 69 duodenal) which have been dealt with in the Surgical Unit at St. Mary's Hospital by myself, 56 only (24 gastric and 32 duodenal sufferers) have been operated upon long enough and been available for subsequent inquiry of results to afford any useful information. It is of these that I wish to write.

Selection of Patients Suitable for Operative Intervention.

The closer acquaintance with this disease becomes the greater grows the conviction that surgery should not follow diagnosis as a routine. Experience completely fails to uphold the view of some surgeons that ulcers once formed can never be induced to heal without its aid.[1] I have excised segments of both stomach and duodenum with lesions indistinguishable by simple inspection from ordinary ulcers in which histological examination has shown cicatrisation to have taken place and a layer of epithelium to have spread over the surface. During the periods of relief between active symptoms so characteristic of ulcer reparative activity certainly occurs, and sometimes leads to epithelialisation of the ulcer. The discovery of scars in the stomach or duodenum in the post-mortem room also points in the same direction, and is not so rare an occurrence. C. Hart[2] found as many scars in the duodenum as actual ulcers in his series of autopsies. In successive gastroscopies R. Schindler[3] actually watched a gastric ulcer heal. Nevertheless it is a very striking fact of pathology that, in addition to the large callous gastric or duodenal ulcers, there exist others of quite small size (sometimes in the duodenum they are mere clefts), which persist unhealed indefinitely without the aid of surgery. Surgery is nearly always necessary when a Haudek diverticulum of any size can be demonstrated by X ray examination; it is certainly required when a serious haemorrhage has occurred or where the pylorus has been narrowed, but in all other cases the patient should be allowed the trial of medical measures and only when his lesion has proved intractable to these means should he be subjected to the risk of operative treatment.

The Plan followed in Operating upon Ulcers.

The policy adopted in dealing with these ulcers has been as follows: For gastric ulcer some form of resection is considered first, and only abandoned for gastro-enterostomy when the procedure appears to be fraught with much risk or technically impossible. When the ulcer is very large and its adhesions are so widespread that access to normal stomach proximal to the lesion cannot be obtained, then gastro-jejunostomy has been preferred. A previous perforation or perigastric abscess may bring such conditions about. Only in one case was gastro-jejunostomy done because the ulcer at the pylorus appeared to have healed leaving nothing but a scar. Amongst the 61 operations for gastric ulcer, on four occasions the abdomen was closed leaving conditions within unchanged; even gastro-jejunostomy was impossible.

In the case of duodenal ulcer the policy followed has been very similar, except that there have been two indications up to the present for preferring gastro-jejunostomy to resection—namely, (1) doubt as to the possibility of separating the callous mass without damage to the pancreatic or bile-ducts; (2) the small soft ulcer of the anterior wall of the duodenum, where duodenectomy in its present probationary stage was considered to entail an unjustifiable risk.

Amongst 61 cases of gastric ulcer a resection of the stomach was carried out in 47 (77·5 per cent.), of which more than one-half (67 per cent.) were cases of ulcer adherent to or penetrating the pancreas. In five of these latter the ulcer was also adherent to the liver, in one case to the spleen, and in several instances to the mesocolon. A Billroth I. resection with axial union was performed whenever the ulcer was not at too great a distance from the pylorus (18 times), a sleeve resection when it was situated far toward the left extremity of the lesser curvature (25 times). A Polya operation was done four times and a V-resection with gastro-jejunostomy once. Gastro-jejunostomy was only done in eight cases.

Amongst 69 cases of duodenal ulcer partial duodenectomy was carried out in 49 (71 per cent.). Of these 33 had an ulcer on the concave pancreatic wall of the duodenum (67·3 per cent.). Simple excision combined with a Finney procedure were each done once. Gastro-jejunostomy was done in 18 cases (26 per cent.).

When removal of the diseased part of the stomach has been done the after care is very simple. There is no need for prolonged special diet. The remaining

[1] A. J. Walton: Proc. Roy. Soc. Med., Sec. Surg. 1926, xix., 48.

[2] Mitt. a.d. Grenz. d. Med. u. Chir., 1918, xxxi., 291.

[3] Münch. med. Woch., 1923, vii., 421.

stomach is smaller but healthy. The patient should avoid indigestible food until it is certain that the anastomotic sites are completely healed (six weeks), after which he is able to take ordinary diet, with this reservation, that too much should not be eaten at a time. The stomach being smaller a feeling of distension after meals is liable to be experienced for the first few months after operation. This sensation gradually disappears and after a year has gone.

Results Obtained in Gastric Ulcers.

There were two deaths amongst the 47 resections of the stomach. One of these was an operative death where the hepatic artery was accidentally ligated in a man with a callous ulcer in which cancer was developing. The other man died after a Billroth I. operation on the sixth day with gangrene of the lung. I do not know whether he swallowed vomit recovering from the anæsthetic or later. His stomach was somewhat dilated post mortem, a complication I have met with on two occasions after this type of gastrectomy, but one which is immediately relieved by the passage of a thin stomach-tube and aspirating the contents. He had vomited after a comfortable period of three days. There was a freely patent pylorus and good healing at autopsy. The mortality of gastrectomy for ulcer has therefore been 4·25 per cent.

Of 20 gastric resections operated upon long enough for the after-history to be of value (18 months) 16 (80 per cent.) are absolutely well. The four patients still with some complaint are :—

CASE 25.—A nun of 49 operated upon May 7th, 1925. Ulcer of lesser curvature with hour-glass contraction removed by sleeve resection. Now complains of a little flatulence. She has no pain and eats ordinary food.

CASE 33.—A man of 37 had an ulcer of the posterior surface of the stomach near the cardiac end and adherent to the tail of the pancreas removed by sleeve resection on Sept. 23rd, 1925. For the first year after operation he complained of pain after food occasionally, but since then has been free. He has gained a stone in weight since his operation.

CASE 38.—A woman of 52 had a Billroth I. operation performed on June 25th, 1925. She had an early carcinoma close to the pylorus and a simple ulcer in the posterior wall of the stomach. She says she has occasional pains in the right side of her abdomen, but has no discomfort which she attributes to food.

CASE 16.—A woman of 38 had a Billroth I. resection for an ulcer rather far along the lesser curvature away from the pylorus on Jan. 17th, 1924. She complains of a little pain occasionally in the left side of her back. She eats ordinary food, and her weight has increased by half of what it was when she was operated upon (6 st. 12 lb.).

These failures are not absolute. In each case the patients have received very great benefit from the operation. Partial gastrectomy has therefore proved to be a most successful procedure, and sleeve resection seems as good a method as the Billroth I. or Polya operation.

Gastro-jejunostomy is by general consent regarded as only of limited value as a curative operation for gastric ulcer, and rightly so, but it would be unfair not to refer to Case 30, a man of 50, who had such a large ulcer penetrating the pancreas and so many adhesions around that only an anterior gastro-jejunostomy could be carried out. Fourteen months later he has no indigestion and declares himself to be in perfect health.

Results Obtained in Duodenal Ulcers.

Partial duodenectomy has been said to be too dangerous an operation to be considered a routine method of treatment. It is indeed a difficult and tedious procedure, but becomes more easy with increasing experience. In 33 of 49 patients upon whom partial duodenectomy was performed ulcers were present on the pancreatic wall, so those cases were not selected on account of ease of performance of the operation. Two patients died, one from bronchopneumonia, the other from cardiac failure 10 days after operation, a mortality of 4 per cent. This is almost exactly that of partial gastrectomy in my hands.

Of 21 partial duodenectomies subsequently investigated 18 are absolutely well (85·7 per cent.) Of the three failures one complains of being full of wind after meals, but not of suffering any pain. He is very nearly quite well. The other two failures are :—

CASE 11.—A man of 37 had a resection with axial union of stomach and duodenum on April 14th, 1924. There was an ulcer on the anterior wall of the first part of the duodenum and a second on the posterior wall which had penetrated into the pancreas. He now complains of some late pain after food when working, but not when he rests. He eats only boiled food and says he occasionally vomits a sticky fluid.

CASE 30.—A man of 28 had a similar operation performed on Nov. 3rd, 1924, for an ulcer on the anterior wall of the duodenum which spread round to the back forming a stricture. This man writes very gratefully for relief of pain, but still apparently gets some of a mild character which radiates to the right shoulder. He takes no special diet. He says that he is better since giving up alcohol and excessive smoking to which he was addicted.

The patient whose common pancreatic and biliary ducts I accidentally injured and reported on in 1924 is now free from any abdominal trouble of any kind.

During the same period that these 21 duodenectomies were done nine cases had a gastro-jejunostomy performed. Five of these patients are absolutely well (55·5 per cent.), and four complain. These four patients all appear to have considerable pain, have to be very careful what they eat, and one of them vomits. One of these operations was done on a man whose ulcer had perforated a year previously. The other three men had ulcers with very little fibrosis around them. It would not be right to accept this percentage of cure from gastro-jejunostomy as a true picture of results, as the numbers are so small. Nevertheless, the difference between it and that following duodenectomy is very great, and justifies us in regarding gastro-jejunostomy as an inferior method of cure.

Conclusions.

1. When the results of the operative treatment of medically intractable gastric and duodenal ulcers by a single operator using different methods are compared it is found that a large proportion of patients are cured and the remainder improved.

2. Partial gastrectomy will cure 80 per cent. of such gastric ulcers. It can be carried out in 77 per cent. of all cases and has a mortality of 4·25 per cent.

3. Gastro-jejunostomy is accepted as a much inferior method, but sometimes gives remarkable relief in the most unfavourable conditions.

4. Partial duodenectomy will cure 85 per cent. of duodenal ulcers which have not responded to medical measures. It can be done in 71 per cent. of cases and has a mortality of 4 per cent.

5. Gastro-jejunostomy is a much inferior operation to partial duodenectomy. In the small group of patients in whom it was used only 55 per cent. were cured. This result agrees generally with those previously published by myself,[4] by R. Lewisohn,[5] D. Forsyth,[6] A. Widler,[7] von Haberer and others, but contrasts strongly with those results published by Sir Berkeley Moynihan,[8] J. Sherren,[9] A. J. Walton,[10] and D. Balfour.[11]

It is suggested that either a different class of case is dealt with by the two groups or a less exacting standard of cure is demanded by the one and that the only method of arriving at the truth of this matter is for each individual surgeon to compare the relative values of partial duodenectomy and gastro-jejunostomy in his own practice.

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[5] Surg., Gynec., and Obstet., 1925, xl., 70.
[6] THE LANCET, 1924, i., 780.
[7] Mitt. a. d. Greng. d. Med. u. Chir., 1922, xxxv., 103.
[8] Gastric and Duodenal Ulcer. Bristol: John Wright and Sons, 1923.
[9] THE LANCET, 1924, i., 477.
[10] The Surgical Dyspepsia. London, 1923.
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A STUDY OF THE PATELLAR REFLEX IN EPIDEMIC ENCEPHALITIS,

WITH SPECIAL REFERENCE TO THE EFFECT OF HYOSCINE UPON IT.

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DESPITE the great importance of the patellar reflex, very few attempts have been made to examine in detail the variations to which it is subject in health and disease. In the present paper an account is given of an attempt to study closely the knee-jerk in cases of epidemic encephalitis. The effect of hyoscine and stramonium on this reflex is also dealt with.

Description of Apparatus.

The apparatus employed consists essentially of two parts, one concerned with the application of the stimulus to the patellar tendon, the other with the graphic representation of the knee-jerk thus obtained.

The first part is composed of a hollow metal cylinder with a bore of about ¾ in., through which runs a metal piston. At one end of the latter is a handle and at the other end a small rubber disc, ¾ in. in thickness. By means of the handle the metal piston can be pulled back for a certain fixed distance against the resistance of a spring which is contained within the metal cylinder. Once the piston has been forced back in this way it can be fixed by means of a small catch. If this catch is slipped the spring will recoil carrying with it the metal piston and causing the rubber disc to strike against the patellar tendon. A stand is employed in order to fix the cylinder with the contained piston at the required level.

The recording portion of the apparatus consists of a lever with its fulcrum placed close to one end. The short arm of the lever carries a pointer which writes on a revolving drum driven by clock-work. The long arm of the lever is attached to the posterior aspect of the patient's ankle. Thus it will be seen that any movement of the patient's foot will be accompanied by a corresponding excursion in the opposite direction of the pointer writing on the drum. The latter is arranged in such a way that it slides to and fro on two parallel strips of metal thus keeping its long axis always in the same direction. The apparatus described above was assembled according to Dr. F. Golla's directions.

Method of Obtaining a Graphic Representation of the Knee-jerk.

The patient's right leg is stripped to a point a few inches above the knee. He is placed in a chair which is raised on blocks and which has attached to it a simple contrivance for fixing the right leg above the knee. The right leg is allowed to hang over the edge of the chair and of course cannot touch the ground as the chair is raised on blocks. The patient's left foot is slipped behind the left leg of the chair so that it will not interfere with the movement of the long arm of the lever. The latter is attached to the patient's ankle in the region of the tendo Achillis. The direction of the long arm of the lever is compared with that of a special metal guide which is fixed below the fulcrum in such a way that it is at a constant angle to the long axis of the drum.

By altering the position of the stand on which the drum, fulcrum, and direction guide are fixed, the long arm of the lever can be made to run parallel with the direction guide with the result that the pointer is always inclined in the same direction when it is recording the knee-jerk on the drum. The latter, on which has been placed a blackened paper, is moved forward until the pointer is resting lightly upon it. The pointer is raised and the drum is made to rotate until it has reached its maximum speed when the pointer is allowed to rest on the revolving blackened paper. A signal is given to the person operating the stimulus-producing apparatus and he frees the piston, which strikes the patellar tendon and causes the reflex. As the leg swings forwards and backwards a corresponding movement of the pointer in the opposite direction occurs and a graphic representation of the patellar reflex is thus obtained.

It will be obvious that one can compare the general contour of the curves and the time taken in different cases, but it is not possible to compare the amount of the excursion since its graphic representation will be influenced by the length of the patient's leg from knee to ankle. In order to find the length of time taken, each record is marked by a time signal which shows hundredths of a second.

Description of Normal Knee-jerk.

Below will be seen a graphic representation of the normal knee-jerk. (Fig. 1.) The tracing shows three distinct curves, two below and one above the axis line. The axis line corresponds with the resting position of the leg just before the knee-jerk is elicited. The first curve is below the axis line and corresponds with the forward swing of the leg immediately the patellar tendon has been struck. The second curve, which is above the axis line, is caused by the backward swing of the leg which occurs as soon as the extensor muscles of the knee relax. The third curve is below the line and represents a secondary forward swing of the leg. If the drum on which this record was taken had been larger, more secondary swings forwards and backwards would have probably been recorded, and these would have become less and less marked until finally the leg would have come to rest and the pointer would have again coincided with the axis line, as was the case before the patellar tendon was stimulated. Every normal knee-jerk shows at least one secondary swing, and the majority show more than one.

The time taken by each of these first three curves varies within the following limits:—

1st curve or primary forward swing 45 to 60
2nd curve or primary backward swing 26 to 44
3rd curve or first secondary forward swing 26 to 50
} hundredths of a second.

The total time taken by the first three curves varies from 110 to 145 hundredths of a second.

Interpretation of the Knee-jerk Tracing in the Normal Person.

Some difficulty is experienced in the interpretation of the meaning of the normal knee-jerk tracing. The primary forward swing of the leg, portrayed on the drum as a curve situated below the axis line, is of course due to the contraction of the extensor muscles of the knee, but the interpretation of the other curves, above and below the axis line, is less obvious. The primary backward swing of the leg, shown on the tracing as a curve above the axis line, occurs immediately the extensors of the knee relax and appears to be capable of two interpretations.

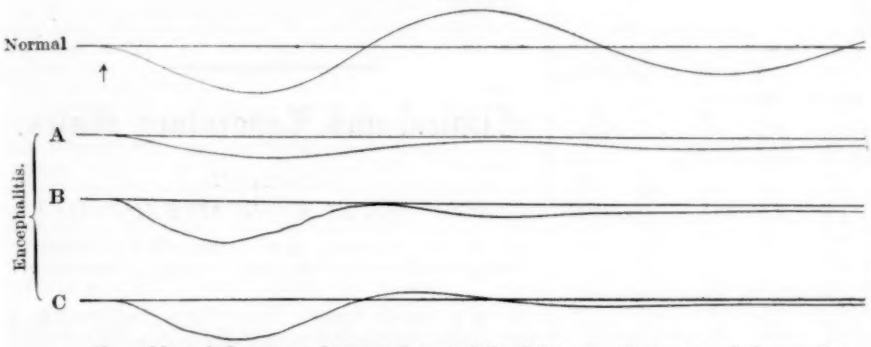
In the first place, the sudden contraction of the extensors of the knee following upon the application of the stimulus to the patellar tendon is accompanied by a lengthening of the opposing flexors. This sudden stretching may be a secondary reflex contraction of the latter with the consequent backward swing of the leg. Or, in the second place, the primary backward swing of the leg might be regarded as due to a pendulum-like movement, the leg below the knee behaving like an inert body and, after the contraction of the quadriceps has ceased, swinging backwards and forwards a number of times before finally coming to rest. If both these explanations might apply to the primary backward swing they might also apply to all the secondary swings of the leg.

As regards the first theory it has been demonstrated by Golla [1] by means of an electromyographic method that a contraction of the flexors of the knee does actually take place in the patellar reflex. The antagonists enter into contraction about 10 sigma after the beginning of the response of the quadriceps. By means of a mechanical method this contraction of the flexors was shown by Gordon Holmes,[2] though with his method the time relations could not be determined. The electromyographic records published in a subsequent paper by Golla and Hettwer [3] show, however, that the flexor contraction does not outlast the reflex quadriceps contraction. There seems to be no reason for attributing the backward swing of the leg to this flexor contraction, as Golla has pointed out that, when the patellar reflex is elicited as an isometric contraction there is no active rebound, although the flexor contraction coexists with the quadriceps contraction.

The second theory, which holds that the leg below the knee, once the contraction of the quadriceps has

ceased, behaves like an inert body and swings backwards and forwards after the manner of a pendulum, appears to be the correct one for the following reason. If, instead of causing the forward swing of the leg by striking the patellar tendon, the leg is passively moved forwards to the same extent as would occur when the patellar tendon is struck and is then suddenly released the leg will swing backwards and forwards for a short period of time in a pendulum-like manner. Obviously in this case there has been no sudden lengthening of the flexors of the knee and hence a reflex contraction due to sudden stretching of these muscles could not occur, and yet a primary backward swing and some secondary swings are obtained very similar to those which follow elicitation of the patellar reflex. This pendular movement of the leg below the knee is dependent on the presence of only a small amount of postural tone, as is the case in the normal person.

FIG. 1.



Normal knee-jerk curve and curves characteristic of three specified groups of abnormality.

Description of the Knee-jerk in Encephalitis.

In all 18 patients suffering from mental symptoms associated with chronic epidemic encephalitis were examined, and 13 of them gave knee-jerk curves which differed from the normal. It was found that these abnormal curves could be divided into three distinct groups:—

Group 1.—The leg swung forwards executing the primary forward swing, but instead of immediately swinging backwards, remained in a fixed forward position, thus tracing on the drum a curve which lay wholly below the axis line (Fig. 1. (A)). Six cases fell within this group (see table, Nos. 1 to 5.)

Group 2.—The leg, after its primary forward swing, fell back until it reached its resting position, and then swung forwards again, thus tracing on the drum a curve which lay below the axis line, but touched it at one point. (Fig. 1 (B)). Two cases fell within this group (see table, Nos. 6 and 7).

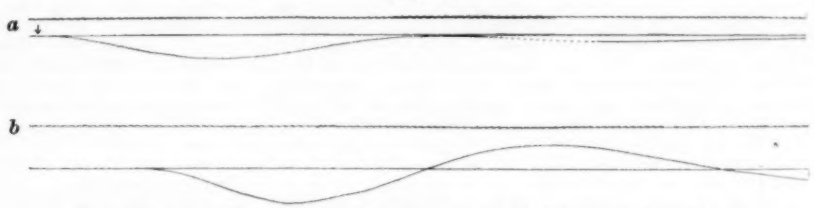
Group 3.—The leg completed the primary forward and backward swings in the normal manner, then swung forwards again and remained in a fixed position. (Fig. 1 (C)). The five cases in this group gave tracings in which the first two curves appeared normal, but the pointer, once it had completed the second curve, remained below the axis line (see table, Nos. 8 to 12).

All the cases composing these three groups showed clinically muscular rigidity to a more or less marked extent. The remaining five cases out of the total of 18 gave knee-jerk tracings which appeared normal. Only one of these five cases from the clinical standpoint showed definite muscular rigidity.

Interpretation of the Knee-jerk Tracing in the Encephalitic.

When dealing with the normal knee-jerk tracing it was suggested that the primary backward swing of the leg and all the secondary swings were due to the fact that the part of the leg below the knee, after its primary swing forward as the result of stimulation of the patellar tendon, behaved like an inert body, and swung backwards and forwards after the manner of a pendulum before finally coming to rest. In cases of encephalitic Parkinsonism this movement is lost to a greater or less extent, due to the fact that in them there is a marked increase in the amount of postural tone present, as described by Foix [4] and Delinas-Marsalet.[5] In the normal person, if a limb be passively flexed, immediately the support is withdrawn the limb will return to its former resting position. In the case of encephalitic Parkinsonism the return to the former position is retarded on account of the increased postural tone in the muscles involved. Hence, in the case of the knee-jerk in the encephalitic Parkinsonism the leg, once it has swung forwards, tends to remain in a fixed forward position or returns to the resting position (the axis line) at a much slower rate than the normal.

FIG. 2.



Knee-jerk curves showing effect of hyoscine on encephalitis—(*a*) before, (*b*) after administration.

Effect of Hyoscine.

(1) *On the normal knee-jerk.*—The normal knee-jerk was little if at all influenced by the injection of hyoscine. The time taken by the curves was in some cases increased, in others diminished, but the general contour of the tracing conformed to the normal.

(2) *On the encephalitic knee-jerk.*—In 12 of the 13 cases of encephalitis which gave abnormal knee-jerk tracings the hypodermic injection of hyoscine hydrobromide caused, in from two to three hours, the general contour of the knee-jerk tracing to approach more closely to that of the normal. In some of the cases this beneficial effect on the tracing was more marked (Fig. 2), (*a*) before hyoscine, (*b*) after hyoscine. The table contains the details of these 12 cases before and after hyoscine.

Any increase in this reading after hyoscine would mean that the knee-jerk had become more active or even definitely exaggerated. Similarly, any decrease would signify a less active or even sluggish knee-jerk. A glance at the table will show that the action of hyoscine in this respect varies greatly in different cases. It is interesting to note that those cases which presented abnormal knee-jerk tracings and in whom

hyoscine caused an improvement in the general contour of the curves also benefited clinically from the exhibition of this drug. The one case which showed an abnormal tracing which was not made to approach more closely to the normal from the clinical standpoint benefited only slightly when treated with the drug. Of the five cases which gave normal types of knee-jerks three benefited clinically from the drug and two were uninfluenced.

Case.	Before hyoscine.				After hyoscine.			
	Pr.F.S. in 1/100th sec.	Pr.B.S. in 1/100th sec.	Sy.F.S. in 1/100th sec.	Height of Pr.F.S. in cm.	Pr.F.S. in 1/100th sec.	Pr.B.S. in 1/100th sec.	Sy.F.S. in 1/100th sec.	Height of Pr.F.S. in cm.
1	R	R	R	1·08	43	17	18	1·06
2	R	R	R	1·35	62	28	62	1·9
3	R	R	R	1·85	49	19	R	1·15
4	R	R	R	1·1	39	40	—	1·65
5	R	R	R	1·2	52	21	R	1·1
6	46	R	R	0·5	43	21	34	0·55
7	54	R	R	2·0	47	29	32	1·8
8	45	20	R	1·1	51	37	41	0·3
9	56	19	R	0·6	51	36	40	0·5
10	50	15	R	1·05	45	37	28	0·85
11	42	7	R	1·05	42	31	41	1·3
12	43	34	R	0·4	43	43	27	0·3

Pr. F.S. = Primary forward swing.
Pr. B.S. = Primary backward swing.
Sy. F.S. = Secondary forward swing.
R = Remained below axis line.

Wherever the pointer failed to return to the axis line (position of rest of leg) and remained in a fixed position below the line the letter "R" is inserted. Where, however, the pointer swung freely completing one or more curves the time taken by each curve is noted in hundredths of a second. The amount of excursion of the leg during the primary forward swing is shown in the tracing by the distance the first curve reaches below the axis line. This distance is shown in a separate column in centimetres.

A few cases of katatonic dementia præcox were examined with a view to ascertaining whether, on account of the muscular rigidity present, the type of knee-jerk tracing would resemble that of the encephalitic, and if so, whether hyoscine would exercise any similar beneficial effect on the general contour of the curves. It was found that cases of katatonic dementia præcox presented knee-jerk tracings which closely resembled those found in group I. of the encephalitics, but that hyoscine failed to make the curves approach the normal, in striking contrast to the effect of this drug in cases of encephalitis.

Certain French writers [6] have reported that the exhibition of stramonium by the mouth is attended with good results in cases of Parkinsonism. They claim that among other things the rigidity is to a large extent removed although the tremor is unaffected. In view of this report five of the cases of encephalitis under review were placed on tinct. stramonii (♏ xxv. t.i.d.), and their knee-jerks investigated. It was found that in one case the knee-jerk tracing was made to approximate more closely to the normal; the other four were unaffected. Clinically three of the cases showed a very slight improvement, but the benefit obtained fell far short of that caused by hyoscine.

Conclusions.

1. The great majority of cases of epidemic encephalitis, especially those which exhibit Parkinsonism, give a definitely abnormal patellar reflex. 2. Hyoscine, which has been shown to produce marked temporary improvement in these cases, causes the abnormal knee-jerk to approximate to the normal. 3. Cases of katatonic dementia præcox with well-marked rigidity show abnormal knee-jerks which closely resemble some of those found in encephalitic Parkinsonism, but hyoscine signally fails to exert a beneficial action on these abnormal knee-jerks.

In conclusion, I would like to thank Dr. F. L. Golla, the Director of the Pathological Laboratory of the Maudsley Hospital, at whose suggestion these investigations were undertaken, for his unfailing interest and assistance. To Dr. N. Roberts, the medical superintendent of West Park Mental Hospital, I am indebted for permission to publish the particulars of the cases investigated.

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Clinical and Laboratory Notes.

A NOTE ON CASTOR OIL IN ACUTE APPENDICITIS.[1]

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IT is generally agreed that to give castor oil in a case of acute appendicitis is bad practice; it is contrary to the established principle that an inflamed structure should be rested. Nevertheless, patients with acute appendicitis are liable to be given castor oil either by their relations, before the doctor is called in, or by the doctor himself, who may give a dose of it as treatment for abdominal pain whose cause is as yet undiagnosed.

The belief that castor oil does, in fact, cause acute appendicitis to take a more violent course than it otherwise would is supported by an analysis of a series of 50 consecutive cases of this disease admitted to beds in Addenbrooke's Hospital since I became house surgeon. Cases of chronic and quiescent appendicitis which have been operated upon were excluded from the series; all the cases were sent in as acute "emergencies" and were operated upon forthwith as such.

In six of these 50 cases the appendix was only mildly inflamed—that is to say, the inflammatory changes were limited to the mucous membrane. In 21 the appendix was acutely inflamed, the whole organ being swollen and thickened, and lymph being present in some cases on the peritoneal surface. The remaining 23 cases were all more advanced. In ten of them the appendix was gangrenous but not perforated, and no pus was present; the other 13 were all appendix abscesses, and in six of these the appendix was found to have perforated.

In every case, as matter of routine, the patient or the relations were definitely questioned about purgatives, and in eight of the 50 cases it was stated that castor oil had been administered. In all of these eight cases the appendix was gangrenous, and in two it was perforated. In six of them pus was also present, and one of the patients died. It is significant that whilst only one-sixth of the 50 patients had had castor oil, this one-sixth included half those who developed an appendix abscess.

Of the 50 cases the following three were fatal:—

CASE 1.—A man, aged 37, came in on the fourth day of his illness with an appendix abscess. Jaundice was first noticed on the day after his operation, and he died on the eighth day of portal pyæmia.

CASE 2.—A man, aged 55, had dosed himself with pills at the onset of illness, and came up on the third day with a large appendix abscess. He did very well for a few days after operation, but then he developed acute obstruction due to adhesions, and he died on the ninth day after a second operation.

CASE 3.—A woman, aged 61, had been given castor oil by a friend at the onset of abdominal pain and came up on the fourth day. Her appendix had completely disintegrated and she had extensive peritonitis and fæcal matter free in the abdomen. The abdominal cavity was opened and drained, but she died of heart failure on the fourteenth day after operation.

[1] Read at a meeting of the Cambridge University Medical Society on March 4th.

I think that two reasons may be given for the harmful effect of castor oil upon the course of acute appendicitis. One is the obvious one—namely, that the oil further irritates the already inflamed and irritated gut, and thus accelerates the pathological changes that are taking place. The second reason is that it delays operation, because it means that whoever gives the oil is going to temporise with the case, the appendix being left to give rise to an abscess, and possibly to perforate. It may be noted that all three fatal cases were late cases; in one acute symptoms had been present for three days, and the other two for four days.

The 50 cases—or rather the 47 survivors—may be analysed in a different way. In 13 cases the patients were admitted to hospital on the first day of their illness and were discharged from hospital in an average time of 11 days from admission. In eight cases the patients came in on the second day, and their stay in hospital averaged 13 days. The remainder, admitted on the third day and later, spent an average of 16 days in hospital.

In conclusion, I may mention a case which is not included in the 50, because it is more recent.

A girl, aged 14, was seized with abdominal pain one day at noon. One hour later her mother gave her a dose of castor oil, which made the pain much worse. A doctor was called in later in the day, diagnosed acute appendicitis, and sent her straight into hospital. She was operated upon eight hours after the commencement of her pain. Her appendix was long, red, and tensely distended and covered on the outside with lymph. Its lumen was found to be full of that yellowish, intensely irritating fluid motion which is associated with castor oil, and the mucous membrane was full of small hæmorrhages.

I think it is clear that the pathological changes in this case were being accelerated by the castor oil.

A CASE OF
UTERUS DIDELPHYS WITH PREGNANCY
ALTERNATING IN THE TWO HORNS.

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PREGNANCY has often been recorded in a congenitally defective uterus, even where there is independent development and complete failure in fusion of the Müllerian ducts. Usually, however, atresia in some part of the cervix or vagina, of one or other side, only allows of the development of a fertilised ovum in a single horn; so that when evidence is found at operation of pregnancy occurring at intervals in both horns of a double uterus, the case is worthy of description.

A woman, aged 27, was brought to the Swansea General Hospital by Dr. D. B. Harrington on Dec. 27th, 1926. She had reached term in her second pregnancy, having been delivered four years previously, by Cæsarean section, of a stillborn male child weighing 10¼ lb. Operation had been withheld in this instance until labour had been obstructed for a period of four days.

On abdominal examination the fundus was found to be at the level of the xiphoid process and directed towards the right side. Fœtal heart sounds were plainly audible. A distinct mass was palpable above the pubes to the left of the middle line. The vulva was normal in appearance, but vaginal examination disclosed the presence of two distinct passages each containing a normal cervix and external os, separated from one another by a lax median septum. Both cervices were softened and the external os upon the right side admitted one finger.

Labour was allowed to continue and eventually the membranes ruptured but the head did not descend. On Dec. 28th, as the patient was extremely anxious for a living child, an abdominal Cæsarean section was decided upon. Laparotomy revealed a condition of complete uterus didelphys with a well-marked fold of peritoneum, or vesicorectal ligament as it is termed, occupying the deep fissure between the horns. The left horn, which was of a size corresponding to a three months pregnancy, exhibited, on its anterior surface, the scar of a previous Cæsarean section. From the right horn a living female child, weighing 6½ lb. was delivered. Permission to sterilise the patient could not be obtained although the danger of future pregnancies was explained.

Recovery was uneventful and when they were last seen, on April 7th, the mother and her child were both very well.

An additional point of interest in this case is that the uterine abnormality produced an obstructed labour in both pregnancies, whereas, according to most authorities, a double uterus does not usually interfere with spontaneous delivery.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

AT a meeting of this Section held on April 26th, the chair being occupied by Dr. HUGH THURSFIELD, the President, Dr. A. OSMAN and Dr. H. CARTER read contributions on the

Prevention of Scarlatinal Nephritis.

Dr. Osman said in an investigation into the treatment of nephritis by means of doses of alkalies it seemed possible that benefit might be derived from using alkalies prophylactically. With that object in view, and through the kindness of Dr. T. H. Woodfield, the superintendent of the Park Fever Hospital, Hither Green, a certain number of wards were set aside for a number of months, and alkalies were given to the occupants of those beds as a routine, in small doses, in order to test the matter. In some of other wards alkalies were not given to the patients, and these were used as controls. In an experiment of this kind, on a somewhat large scale, it was difficult to follow out the minutiæ in all the investigations as one would like, especially in regard to dosage. It was only possible to give a standard dose over an arranged period and watch the results. After a time it was found that a small dose 0·90 g. a day was not sufficient, and so it had to be increased until a dose was reached at which albuminuria and nephritis appeared to be at any rate less common that in the cases in the control wards. The figures which Dr. Carter would give were not to be considered final, but they were those obtained to date; they covered the 14 months during which the experiment had been in progress.

Dr. Carter projected on to the screen tables of figures relating to the cases observed. The first table showed the cases which had been treated in the way described in the five wards set apart during the first three or four weeks of the scarlet fever. The disease in these patients was of varying severity and the range of age-incidence the usual one—4 to 10 years. Of the 620 patients in this group, four developed nephritis; there were no cases of albuminuria. Three of the four patients developed the nephritis between the twenty-second and the twenty-fifth days of the disease, at a time when the alkalies were given only over a period of three weeks, so that when the nephritis developed the prophylactic treatment had already been discontinued. In all four the urine was strongly acid. One of the four cases was fatal This child had developed nephritis on the fourteenth day of the disease; death took place nine days later, and for seven days before the end suppression of urine had been complete. Sections of the kidney of that case were examined by Dr. J. E. McCartney and also by Prof. A. Stokes, of Guy's Hospital, and both reports agreed that a previous nephritis lesion existed. Dr. McCartney's report was that it was subacute interstitial nephritis with antecedent glomerular change. The table showed a total incidence in these special wards of

0·6 per cent. nephritis, albuminuria nil. The second table embraced the remainder of the cases of scarlet fever in the hospital—i.e., those which had not been treated with alkalies—and the 316 cases showed an incidence-rate of nephritis of 2·9 per cent. The third table showed a comparison with the figures obtained from a fever hospital for acute cases, an institution which drew its cases from the same localities as that already named. The period covered was the same. Here, out of 336 cases, there were 7 of nephritis, 12 of albuminuria. The total incidence was 5·5 per cent., and it corresponded, roughly, with the incidence in the London area in what could be regarded as a mild type of the disease. After obtaining such encouraging results it seemed possible, Dr. Carter said, by employing some modification of Sellard's test for alkaline tolerance and giving a set dose of alkalies, to arrive at an opinion as to which cases of scarlatina were likely to develop nephritis during that illness, and to aid treatment by estimating the calcium bicarbonate curve during the course of the scarlet fever.

Discussion.

The PRESIDENT invited Dr. Osman to say why he was led to carry out this alkali treatment and why he considered this method was likely to diminish the incidence of nephritis.

Dr. OSMAN replied that he had noticed, in the treatment of nephritis of all types, that when the urine of patients was alkaline, the amount of albumin passed was less, and the volume of urine voided was more, than when the urine was acid. That led him to a study of the alkalinity of the blood and related questions. Whilst working on that, he encountered a case of anuria, caused apparently by a large dose of sanocrysin. By giving that patient large doses of alkalies the anuria was overcome, in Dr. Osman's opinion, because of the alkalies. It seemed to him possible, therefore, that, in other cases, if metallic drugs were going to be used, the toxic effect of such drugs might be warded off by giving alkalies prophylactically; and in one or two instances that seemed to be the case. Then it occurred to him that the experiment might be tried on a larger scale, and that the only condition under which one was likely to meet with a supply of cases of nephritis was in connexion with scarlet fever.

Dr. J. D. ROLLESTON emphasised the very low incidence of nephritis in scarlet fever at the present day, and said that for this reason it was difficult to know how far to attribute to treatment what might possibly be simply the natural course of the disease. The medical officers of all fever hospitals seemed to agree as to the great dearth of cases of nephritis in scarlet fever; in the fever hospital with which he was connected he was unable to show a single case of nephritis in the first six months of last year to the students. That experience was largely paralleled in Paris and other places on the continent. The form in which Dr. Osman and Dr. Carter gave the alkalies was not mentioned. An important question was as to whether prophylactic measures would do harm. The only other which had been tried in this disease, as far as he knew, was the administration of urotropin, and that did harm, in that it caused cystitis. Urotropin for this purpose had now been given up because of the cystitis it produced. He did not think the alkaline treatment would do harm, though the patient probably did not find it pleasant to be given large quantities of alkali.

Dr. PARKES WEBER said it had always seemed to him that, in one respect, what occurred in fevers imitated what took place when people in health suddenly began to take excessive muscular exercise—there was concentrated urine which showed copious deposit of urates after standing. In addition, there was often disagreeable muscular stiffness. He thought the giving of a certain amount of bicarbonate of soda prevented or relieved the symptoms due, in healthy people, to excessive muscular exercise, and that therefore alkalies would be useful in fevers. Probably urotropin was not likely to be of much use in this connexion. If given with alkali instead of with acid, so as to prevent the onset of cystitis, it would be possible to ascertain whether urotropin would be of benefit in this disease prophylactically.

Dr. J. A. RYLE said that Dr. Osman had modestly refrained from giving any indication of the fact that for several years he had been carrying out a patient and most laborious research on alkaline therapy in nephritis. But he had kept his results to himself until he was sure of his ground. The cases treated by him at Guy's Hospital had been most carefully controlled, and he (Dr. Osman) had concluded that there was much to be said in support of the method, improvement being possible especially in water-logging nephritis; here the treatment caused disappearance of the œdema and the albumin in a way which was not seen in the absence of this treatment. Given a case of scarlet fever, it seemed clear that if the urine was over-acid there was more likelihood of the patient having nephritis than if it was not over-acid. The figures so far produced showed how, conceivably, nephritis might be prevented in a certain proportion of cases of scarlet fever by administering alkalies. If there was any support for the contention it was very important to pursue the matter further, and he hoped that those in charge of fever hospitals would take note of what Dr. Osman was doing, and would afford him help and encouragement in an investigation of real importance.

Dr. KINGSTON BARTON referred to three kinds of nephritis after or with scarlet fever, and said it was not clear what was the cause of the nephritis in scarlet fever, whether it was the causal microbe or its toxin. If the microbe was a streptococcus probably two kinds passed through the kidney. The preliminary symptoms took the form of an acidosis, and that was probably why alkalies did good. He asked exactly what alkalies Dr. Osman gave. It was desirable that pathologists should say what were the causes of the three types of nephritis he had mentioned.

Dr. OSMAN, in reply, said he agreed that there had been a considerable decrease of nephritis in scarlet fever during recent years. The form in which he gave the alkalies in these cases was a mixture containing equal parts of potassium citrate and sodium bicarbonate. The reason for selecting this mixture was partly because potassium salts were known to be effective in causing diuresis; but if large doses had to be given potassium salts could not be given alone, especially not to children, on account of their liability to cause diarrhœa. The mixture seemed to obviate that difficulty.

SECTION OF UROLOGY.

AT a meeting of this Section held on April 28th, Mr. GIRLING BALL, the President, in the chair, Sir THOMAS HORDER spoke on the

MEDICAL ASPECTS OF HÆMATURIA.

He gave a list of cases of gross, frank hæmaturia which had been observed in his medical wards at St. Bartholomew's Hospital during the last five years. In 54 of these hæmaturia had been either the main or a very important and striking symptom. The final diagnoses when these patients left the hospital were more or less as follows: Out of the 54 cases, 20 were diagnosed as acute nephritis, 7 as chronic nephritis, 4 as renal calculus, 4 as infective endocarditis, 3 had infection of the urinary tract which was thought to be the cause of the hæmaturia, 2 were suffering from mitral stenosis (and presumably, therefore, had renal infarction), 2 were cases of purpura, 2 were thought to be of prostatic origin. Of the remainder, 4 were diagnosed Addisonian anæmia, polycythæmia (Vaquez's disease), encephalitis treated with hexamine, and hæmaturia probably due to intensive salicylate treatment, whilst 5 cases remained unclassified. Of these last 5 cases he thought that 2 came into that very ill-defined group of hæmaturias which had been called essential hæmaturia.

Acute Nephritis.

Acute nephritis, continued Sir Thomas Horder, was obviously by far the commonest disease coming nowadays to the physician for hæmaturia. He found it difficult to say which type of infection had the greatest tendency to produce bleeding. In cases in which there was no recognised source of infection or site of focal sepsis, attempts to decide on the pathogenesis were very disappointing. Again and again these cases—the majority of them in children—were admitted to hospital, and a survey of their past history and present condition left a complete blank as to the nature of the infection. Many theories had been advanced, but none of them were borne out by bacteriological or other evidence. With regard to chronic nephritis, he had nothing to add to the accepted views. In patients subject to latent parenchymatous nephritis it seemed to take very little in the way of subinfection to produce hæmaturia. The term "renal epistaxis" had been rather diverted from Gull's original meaning to a group of cases now called "essential hæmaturia." There was no reason why the term "renal epistaxis" should not be applied to a form of bleeding from the kidney which was not associated with vascular changes, but that was not its original meaning. Some authorities stated that bleeding was more prone to occur where a chronic nephritis was syphilitic in origin. To judge by the positive Wassermann in cases of chronic nephritis—if that could be taken as a guide—there was, in the four cases of which he had notes, no special tendency to bleeding; but it was sometimes said that syphilitics tended to a hæmorrhagic type of nephritis.

Renal Calculus.—Infection.—Heart Disease.

His next group consisted of cases in which there was renal calculus. He sometimes wondered if renal calculus could be diagnosed in the absence of hæmaturia, assuming that the radiogram was negative. There was a danger of overlooking a calculus when infection was also present and easily demonstrable. Another group of cases comprised those in which there was acute infection of the urinary tract. One very deceptive case in this group showed a papillomatous condition of the bladder; the patient had had chronic cholecystitis for some time, but the urinary tract infection was quite marked. It was, perhaps, necessary to be on the look-out for a double cause of hæmorrhage—i.e., papilloma in the pelvis of the kidney plus some infection of the urinary tract. Two of the cases in his list were labelled prostatic. The patients were men over 60 years of age, and the diagnosis was made in conjunction with a surgical colleague. One of the patients had hyperpiesis, which might have increased the tendency to bleeding.

Turning to hæmaturia in association with heart disease, Sir Thomas Horder said that there were three heart conditions illustrated in his group—namely, septic endocarditis, mitral stenosis, and dilated heart. One of the cases of infective endocarditis was that of a girl of 18, who complained greatly of pain, so much so that he thought there must be some feature other than septic infarction, but she died in hospital from cerebral embolism, and there was nothing found post mortem to account for the pain except renal infarction. Coming to certain blood states, he mentioned two cases of purpura, both of them of Henoch's type. The relation of purpura was a very complex one. The kidney might bleed as an expression of the purpuric state. The toxic element causing purpura might cause the kidney to bleed, but hæmorrhages into the kidney themselves caused renal changes very closely allied to, if not identical with, nephritis, so that it was sometimes very difficult to say what was the sequence of events. The case of polycythæmia (Vaquez's disease) was very interesting: A woman had been under observation several times in St. Bartholomew's Hospital and elsewhere for retinal hæmorrhage and other conditions. A few hours after sea-bathing she had an attack of hæmaturia, which persisted for the six weeks until her death, and the loss of blood was so considerable as to reduce what had been a polycythæmia down to figures which were just about those of the normal count.

Of the unclassified cases (five), he felt sure that one, or perhaps two, would be put down as essential hæmaturia by those who considered that there should be a group of cases of hæmaturia to which that professional label was given. One of these unclassified cases was that of a patient with aneurysm of the thoracic aorta; she had a profuse hæmaturia four days before death. Another case might possibly be regarded as a calculus or nephrolithiasis. The most typical case of essential hæmaturia was in a man of 33 (from literature he noted that most of these cases occurred between the ages of 20 and 40), who, in 1921, passed blood in the urine. He was examined with the cystoscope and nothing wrong was found. Up to March, 1923, he came back to the hospital three or four times with short attacks of hæmaturia. Nothing in his condition or his past history suggested a reason why he should have this tendency to bleed. Radiology was quite negative, and he had no dysuria. There were no signs of arterial changes, no hyperpiesis, no albumin or mucus in the urine. He did not know what had happened to him since, but he regarded this as a type of case which might go under the name of essential hæmaturia. Amongst his list of cases there did not happen to be an instance of tuberculosis, or of hæmaturia as the result of drugs, except hexamine. This was a case of acute encephalitis. The patient was given not a heroic dose of hexamine—20 gr. six-hourly—and at the end of the third day there was a profuse hæmaturia.

The PRESIDENT said that Sir Thomas Horder's remarks had illustrated the desirability of collaboration between physicians and surgeons in such a field as this. Many cases which used to be called essential hæmaturia were now, as a result of more perfect methods of investigation, classified in other categories.

Dr. GEORGE GRAHAM thought it remarkable that in cases covering five years in the medical wards there should not have been an instance of oxaluria. He mentioned a case of hæmaturia in an elderly lady which had come under his observation and in which there appeared to be nothing to account for the condition except the fact that she had been eating a great deal of ginger. The oil of ginger, though nothing like so potent as turpentine, was said to cause hæmaturia.

Sir JOHN THOMSON-WALKER said that it did not seem to him to have been brought out quite clearly whether hæmaturia was the primary or most important symptom, or was only a secondary symptom. At the same time, having had doubts on the subject, he had been convinced by Sir Thomas Horder that there were medical cases of hæmaturia or medical aspects of the condition. Sir Thomas Horder had rather seemed to imply, in speaking of the prostate, that one was likely to get more hæmorrhage in a malignant prostate, but in fact hæmorrhage occurred much more easily and freely from a large œdematous prostate than it did from a malignant prostate.

Mr. HUGH LETT said that in his experience the very worst hæmorrhages in connexion with the enlargement of the prostate were in cases in which stone was present in the bladder as well.

Mr. SWIFT JOLY asked whether in chronic interstitial nephritis it was the common experience to find the bleeding unilateral. He had cystoscoped three of these cases, and in all of them the bleeding came entirely from one kidney.

Mr. NITCH SMITH said that he knew of one man who by accident was given a concentrated solution of hexamine, receiving 480 gr. of the drug, and it did not have the slightest effect in causing hæmaturia.

Sir THOMAS HORDER, in a brief reply, said that the physician saw all cases of hæmaturia as medical cases until he proved them to be surgical, and if the surgeon attended to all cases of hæmaturia as surgical until he proved them to be medical, and both physician and surgeon pursued their respective methods of approach to the bitter end, the patient got the benefit either way.

ST. JOHN'S DERMATOLOGICAL SOCIETY.

A MEETING of this Society was held on April 27th, with Dr. W. S. FOX, the President, in the chair.

Dr. H. G. ADAMSON opened a discussion on the

Treatment of Some Common Skin Affections

by pointing out how the dermatologist might, from the standpoint of his special subject, attack almost all the problems of medicine and pathology. He said that, without wishing to decry the search for new or more scientific remedies, he felt certain that successful treatment often depended more upon skill in applying a few well-known remedies than in the random employment of new methods, many of which had in recent years proved disappointing. Vaccino-therapy, except for acute staphylococcal infections, had not helped the dermatologist much. Lupus vulgaris could not be cured with tuberculin. The most valuable new addition was X ray treatment, but even this was empirical.

Passing to special conditions, Dr. Adamson expressed the opinion that most eczemas owed their origin to some local irritant, while all were aggravated or kept up by scratching, friction of the clothes, special occupation, or inappropriate treatment. Protection from external irritants was the essential treatment for eczema. A common protection was zinc oxide paste, which should be thickly spread on pieces of open-wove bandage, applied like plaster and firmly bound on. Lint must not be used and the covering layer of wool must be as thin as possible. Twice daily the dressing was wiped off very gently with liquid paraffin and renewed. "Thorough cleaning up" of affected areas often delayed cure. The advantages of tar, of sulphur in seborrhœic eczema, and of small doses of X rays in all cases were well known. When progress was slow lenigallol, 15 gr., might usefully be added to each ounce of the zinc paste. He had no faith in internal remedies or dieting.

Psoriasis and Lichen Planus.

Probably all dermatologists used the same methods for psoriasis—mild mercury ointments, tar, chrysarobin, arsenic, &c.—but an important point was that the ointment should be well rubbed in. Some cases would get well with a simple vaseline if only it were painstakingly applied. Dr. Adamson's favourite application was a paraffin ointment containing 10 gr. of hydrarg. ammon. chlor. and 1 drachm of liquor picis carb. to the ounce. Much of its efficacy seemed to be due to the hard paraffin base. A useful remedy for psoriasis of the scalp was undiluted liq. picis carb. rubbed in with a cheap pastebrush with its bristles cut short. Salicylates or salicin internally had a beneficial controlling effect in cases of acute psoriasis with widespread small-pattern eruption. Salicylates also cut short the duration of pityriasis rosea. If the patient would submit to a thorough course of treatment in bed for at least a month, chrysarobin would generally clear up extensive and obstinate cases of psoriasis.

The only known ætiological feature in lichen planus suggesting a line of treatment was worry or overwork, and of all methods the rest cure was the best. Many cases cleared up very quickly with rest in bed, but for more chronic cases this must be combined with local treatments, of which the best was daily painting with silver nitrate, 10 gr. in one ounce of spirit of nitrous æther.

Impetigo Contagiosa, Acne, and Pemphigus.

In the majority of patients impetigo ran its course in three weeks, whatever treatment was given, but in more persistent cases the period of recovery was generally shortened by daily mopping with silver nitrate solution. Three or four applications of ultra-violet light would usually cure impetigo at any stage. X rays, which made this condition spread more rapidly, were very efficacious for acne when carefully applied. Patients should be told never to touch the face; squeezing and picking the spots kept up the eruption and caused excoriations. Pemphigus in children was generally cured by confinement to bed; this measure was helpful with adults, as also was a daily bath. Instead of an ointment, paraffin No. 7, applied as for burns, added to the patient's comfort. Small doses of tincture of opium benefited the nervous system and had a curative effect.

Some well-known Remedies.

Hot boric or saline fomentations were valuable in furunculosis, impetigo, septic wounds, and crusted lupus, but they were often used wrongly. They must be large, hot, and changed every 10 or 15 minutes for an hour or two, alternating with dry dressing. Many diseases of the skin were best treated in bed where continuous treatment could be given and constant irritation of the skin avoided. Rest in bed was the only thing that would lead to marked improvement in general pruritus, pemphigus, lichen planus, and lupus erythematosus. General pruritus without obvious cause would often disappear completely after a few days in bed. The good results in lupus erythematosus might perhaps be due to non-exposure to light and changes of temperature. Pure carbolic acid applied to a perfectly dry skin had no immediate effect, and if wiped off with methylated spirit had no caustic action. At the worst its caustic action was not deep. Its desquamating power might be used for destroying freckles and for pruritus. The acid was painted on to the freckle with a pointed match-stick and the pigment was permanently removed without scarring. Senile warts could be removed by pressing the acid on firmly with a piece of wool held in forceps.

Pruritus.

A common form of pruritus, occurring only in women, was associated with one or more sharply-circumscribed patches of lichenification at the nape of the neck. A pastille dose of X rays would usually stop the itching, but removed the hair. Carbolic acid swabbing was quite as effective. In most cases of pruritus ani or vulvæ there were found either patches of lichenification due to rubbing, or else radiating fine shallow fissures, or both together. The fissures could be effectively healed by touching with a finely-pointed match dipped in pure carbolic acid. The lichenification patches should be mopped with silver nitrate in spirit ætheris nitrosi. Immediate relief followed, but permanent cure was ensured by an application of X rays, five-sixths of a pastille dose, repeated after six weeks. Another use for carbolic acid was on a tiny shred of wool which, pushed between the nail fold and the nail, would quickly cure onychia.

Uses of Silver Nitrate.

Tincture of iodine might well be supplanted by 15 gr. of silver nitrate in an ounce of spirit of nitrous ether. Iodine produced local inflammation which often masked the original complaint and might start a widespread dermatitis or even pemphigus. The nitrate was efficient in tinea circinata and cruris, and eczematoid ringworm of the feet. Often one or two thorough swabbings would cure a tinea cruris of long standing, and it was useful in any superficial microbic infection of the skin. It was best applied by means of a small swab of wool held in forceps and well pressed into the affected area. It had a well-known value in obstinate and infantile eczemas. The relief it afforded to itching made it useful in lichenification and senile pruritus. Lapis divinus, a mixture of copper sulphate, potassium nitrate, alum, and camphor, fused on the end of a probe, was an excellent remedy for fissures in the nostril and for acne pustules. For electrolysis of hairs the most useful needle was a smooth dental "nerve broche," which did its work without leaving a scar. Another useful tip was to place a strip of zinc oxide plaster round the fore-finger of the left hand so that the hairs collected on its sticky surface. Such little cosmetic operations

as the removal of a mole by electrolysis or cautery often left a small scar; such a scar was quickly healed by a quarter or one-third pastille dose of X rays, without suppuration or keloid.

General Discussion.

The PRESIDENT agreed that vaccines were only of use for acute staphylococcal conditions. The theory that eczema was a coccal dermatitis set up by scratching was opposed by the practical experience that protection acted satisfactorily in one case and unsatisfactorily in the next. The dermatologist must have many strings to his bow. The speaker had never seen a case of psoriasis benefited by oral administration of arsenic, but a very high pressure needle might do a great deal of good. Izal was just as good, if not better. Cases of lichen planus, on the other hand, did benefit from arsenic and a dozen injections of soamin usually cleared up the trouble. In his experience impetigo had become more difficult to cure than it used to be, and hospital cases did better than private ones. Possibly a certain amount of dirt and the formation of a thick yellow crust helped in the cure; certainly the mild thin case without crusts took a very long time to clear up. He agreed that X rays were dangerous for this condition. In pemphigus the whole thing depended on the nursing. He agreed that carbolic acid was good for lichenification, but not better than X rays. He thought official silver nitrate solution was better than the recent silver preparations.

Dr. J. MACL. MACLEOD spoke of the value of X rays for superficial wounds and for cracks about the ears and sides of the mouth in impetigo; one-half to three-quarters pastille dose the day after scraping lupus patches was harmless and valuable. A few cases of pruritus ani had a basis of ringworm.

Dr. W. KNOWSLEY SIBLEY did not agree that the treatment of eczema should be entirely external. Infantile eczema, in his experience, always occurred in the overfed, flabby child and went on indefinitely unless the diet were corrected. Certain individuals were born with a dry skin which was extremely vulnerable throughout life; very slight trauma would produce eczema. For these thyroid was of great value. An important point in the treatment of impetigo was to get the part thoroughly cleansed before the ointment was put on. In his experience, many lichen planus patients had had no worry. Ultra-violet light, like X rays, was very good for acne but was quite harmless. He preferred to give them alternately.

Dr. R. PROSSER WHITE said he was satisfied there was such a thing as diathesis in eczema. Industrial cases were due to irritation of the skin and were easily cured in a certain time, but there was an idiopathic group which reacted quite differently. His treatment was purely external. For the treatment of burns he had found carron oil with a small quantity of hypochlorite very useful. He thought izal was bad for the skin because of its detergent action.

Dr. W. GRIFFITH expressed gratitude to Dr. Adamson for laying stress on real methods of treatment and not on fashionable fads, and agreed with him that very few skin troubles could be cured by the internal administration of drugs. Much of the reputation of arsenic was unfounded, but it was excellent in some of the bullous eruptions, such as dermatitis herpetiformis. Nor did he know any skin disease that could be cured by dietetic measures. Infantile eczema might occur in any kind of infant. Myxœdema could be cured by thyroid, but he did not think ichthyosis could be. He thought it important to be definite about the uselessness of vaccines, as so many practitioners sent cases up for vaccine treatment. He doubted whether any spa treatment was superior to treatment obtainable in London.

Dr. G. B. DOWLING said that carbolic acid treatment of onychia had proved almost invariably successful in his hands. He referred to recent work on napkin rashes, and their treatment by soaking the napkin in a 1/4000 solution of perchloride of mercury, which stopped the growth of the bacillus which converted urea into ammonia and so irritated the skin.

Dr. A. C. ROXBURGH said that this "napkin" treatment had worked well at St. Bartholomew's Hospital.

Dr. S. R. KAPOOR said there were four types of skin which inclined to show eczematous states sooner or later—the florid, coarse, thick skin, the thin anæmic skin, the seborrhœic skin, and the ichthyotic skin. He had had very good results with acid nitrate of mercury in tuberculous conditions, as suggested by Dr. Adamson.

Reviews and Notices of Books.

THE MEDICAL ANNUAL.

A Year Book of Treatment and Practitioner's Index. Forty-fifth Year. Bristol: John Wright and Sons, Ltd., London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1927. Pp. 624. 20*s*.

THE "Medical Annual" is a dictionary of practical medicine, and many contributors, most of them for many years, have watched the progress of their specialties on behalf of the editors. This stability of outlook makes for a continuous series, so that the habit of reading the "Medical Annual" is rarely lost when once it has been acquired. Indeed, though an isolated volume gives much useful information as to recent advances, these can hardly be consolidated in so short a period as one year, and the process whereby discovery is made, doubted, confirmed, and established in routine practice has generally to be sought and followed through several issues of this excellent annual. Those responsible, under the editorial direction of Dr. Carey Coombs and Mr. A. Rendle Short, for compiling the volume include Dr. J. H. Anderson, Dr. R. G. Bannerman, Dr. Joseph Blomfield, Dr. Charles Corfield, Dr. Ivor J. Davies, Dr. Henry Devine, Mr. Norman M. Dott, Dr. F. W. Eurich, the late Dr. W. E. Fothergill, Sir Henry Gauvain, Dr. A. G. Gibson, Dr. A. M. H. Gray, Major V. B. Green-Armytage, Prof. E. W. Hey Groves, Col. L. W. Harrison, Dr. C. Thurstan Holland, Dr. Robert Hutchison, Mr. Geoffrey Jefferson, Lt.-Col. A. E. J. Lister, Mr. J. P. Lockhart-Mummery, Dr. Hugh MacLean, Dr. Reginald Miller, Dr. Joseph Priestley, Sir James Purves-Stewart, Sir Leonard Rogers, Dr. J. D. Rolleston, Dr. W. G. Savage, Dr. Edmund I. Spriggs, Sir John Thomson-Walker, Sir W. I. de Courcy Wheeler, Mr. A. J. M. Wright, and Dr. William H. Wynn. The editors in a brief introduction stress the developments which they consider of especial importance and indicate the direction of progress in various subjects. In some of the surgical articles mention is made of the increasing use of electrothermic methods of cutting tissues. Notable among the medical articles are those on gastric and duodenal ulcer and on gall-bladder disease. Venereal diseases receive full discussion on modern lines; the surgery of the kidney is exhaustively dealt with, while the interest in phototherapy is reflected in the considerable space devoted to this subject; some of the plates in this last-named section could have been spared, since the general benefit of heliotherapy is no longer in any doubt. A note on alopecia areata records good results from the use of carbon dioxide snow; it is claimed by Lortat-Jacob that even in old-standing cases the hair starts to grow again after three or four applications given within three weeks, the patches being rubbed with a blunt pencil of snow until freezing is complete. It is refreshing to find from time to time sandwiched between articles which give detailed summaries of recent work the leisurely reflections of Dr. Joseph Priestley, whose short essays give an admirable picture of the trend of thought in the subjects he discusses. Altogether this year's "Medical Annual," while it has no outstanding discovery to expound, is one of the best that has appeared.

THE SLIT LAMP.

An Illustrated Guide to the Slit Lamp. By T. HARRISON BUTLER, M.A., D.M. Oxon., late Radcliffe Travelling Fellow of the University of Oxford; Honorary Ophthalmic Surgeon to the Coventry and Warwickshire Hospital. London: Humphrey Milford, Oxford University Press. 1927. Pp. 144. 30*s*.

THE use of the slit-lamp in conjunction with the corneal microscope is the most important advance in the technique of ophthalmological diagnosis which we have seen in recent years. To acquire familiarity with it, however, needs time and special teaching which it is not too easy to obtain. Mr. Harrison Butler went to Switzerland and obtained his teaching from Prof. Vogt, whom he regards as the greatest authority on this subject, having created what amounts to a new science.

This book is the outcome of Prof. Vogt's teaching and of Mr. Butler's own work during the last three or four years. Those who have access to an instrument and are prepared to give up the time necessary to acquire familiarity with it will undoubtedly find this book an enormous assistance. It is copiously illustrated by over 147 figures and five coloured plates, some diagrammatic, but many of them illustrating appearances which Mr. Butler has himself observed. So far it is the crystalline lens on whose structure the slit-lamp has revealed the most striking new knowledge. By the use of the "narrow beam" we are enabled to see a series of highly illuminated sagittal sections, and as the different layers have different refractive indices some of them show brighter than others. In this way various regions are mapped out. By the use of the "broad beam" and focusing, the various surfaces can be examined in a detail never before approximated to. The practical importance of the slit-lamp in diagnosis has as yet not received any wide general recognition. The chief practical points on which Mr. Butler lays stress are (1) the estimation of the depth of opacities in the cornea; (2) the diagnosis of the nature of "K.P." spots; (3) the detection of the presence of solid flakes in the aqueous and retrolental space, a matter which may be of decisive importance in the diagnosis of sympathetic ophthalmia; and (4) in the exact estimation of the situation of opacities in the lens. From the point of view of medical jurisprudence he shows by actual examples how important slit-lamp evidence may be, for instance, in distinguishing between recent and old opacities in cornea and lens.

It is a book which will be very highly valued by all users of the slit-lamp.

X RAYS PAST AND PRESENT.

By V. E. PULLEN and W. J. WILTSHIRE. London: Ernest Benn, Ltd. 1927. Pp. 229. 12*s*. 6*d*.

IN a preface the authors state that they have written this book with no ambition of producing a scientific treatise, but with the object of telling the story of X rays by means of a panoramic sketch for the benefit of the interested layman. The result of their labours is the clearest and most readable exposition of the subject that we have yet seen. A brief but lucid historical section, occupying two chapters, explains the various stages in knowledge that led up to the discovery of X rays. This discovery was in no sense accidental, but inevitable, since many observers were actually producing rays which they had not recognised as the source of disconcerting phenomena which they could not interpret. The next chapters deal with the nature of X rays, the researches which culminated in the discovery and weighing of the electron, and the brilliant work of J. J. Thomson, Rutherford, the Braggs, Moseley, and many others. Incidentally the large share of the meteoric advance in knowledge, due to these and other English physicists, will strike every reader. Other chapters follow, brief but adequate, on X rays and crystals, X ray spectroscopy, and on various applications of X rays in science and industry. The book well fulfils the purpose for which it was written.

The authors have succeeded in explaining nearly all the difficulties in such simple language that they have not had to resort to the formulæ which are the language of the physicist, and the stumbling-block of the layman. They have succeeded in conveying to the reader their own infectious keenness and the element of romance that goes hand in hand with all true research.

DISEASES OF BONES AND JOINTS.

Études sur les Affections des Os et des Articulations (Colonne Vertebrale exceptée.) By ANDRÉ LÉRI, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital de la Charité. Paris: Masson et Cie. 1926. Pp. 460. Fr.58.

THIS book is a sequel to that by the same author on affections of the vertebral column, which was noticed in our issue of Jan. 15th, 1927. Like that work it consists of a number of short articles on affections of the bones and joints, and they seem to be reprints of contributions by the author alone or in collaboration with other well-known authorities to various publications.

It is difficult adequately to sum up a book of this kind because of the great number of subjects; 58 communications are here reproduced. However, those who are seeking records of rare conditions of bone and joint disease will find it of value, and perhaps also those who would study different points of view of certain diseases. The author in his introduction disclaims any intention of supplying a précis or handbook for the student. Articles are grouped together under the headings of I. Diseases of Bones, and II. Diseases of Joints. The first part is divided into diseases of development and malformation, and acquired diseases of bone, while the second deals with rheumatism and arthritis and their pathogenesis and treatment. It will thus be seen that tuberculosis of bones and joints is excluded. The most important articles are those on rickets and on Paget's disease. The section on treatment of chronic rheumatic affections is interesting; the author thinks that the good effect in these maladies of thermal springs and mud is due to radioactivity. Since 1921 he has been following the suggestion of Prof. Gabriel Petit and using intramuscular injections of bromide of thorium X., the dose being regulated by the radio-activity of the drug, as compared with that of crystallised radium bromide. This treatment does not affect bony deformity, but relieves pain, and this relief puts an end to reflex contraction and allows physiotherapeutic measures to be applied. The results obtained were encouraging. The book is illustrated with 128 figures.

VENEREAL DISEASES.

Diagnosis and Treatment of Venereal Diseases. By DAVID LEES, D.S.O., M.A., M.B., F.R.C.S., Surgeon in Charge of Venereal Diseases, Royal Infirmary, Edinburgh. Edinburgh: E. and S. Livingstone. 1927. With 87 plates. Pp. 605. 15*s*.

IN this new work Mr. Lees has brought together in a readable form the latest ideas and technique in the diagnosis and treatment of the three venereal diseases. In the first part of the book syphilis is fully considered, and the recognised pathological tests which may be employed in its diagnosis are described. Treatment is clearly and fully discussed, all the modern drugs and their mode of application being given in detail, and tables of treatment of the different stages of syphilis are included. Some of the plates in this section will prove of great value, particularly to the student or young practitioner who gets little chance of observing syphilitic rashes owing to their rapid disappearance under modern therapy.

In the second part gonorrhœa is dealt with most thoroughly, and treatment is here also described

in detail. The complications of gonorrhœa in both sexes are fully discussed. The chapter on gonococcal vulvo-vaginitis in children is good, and the metastatic complications are not neglected. In this connexion treatment of the original focus by diathermy deserves fuller discussion than it receives in two lines on p. 489. In the treatment of gonorrhœa of pregnancy Mr. Lees says that tampons should not be inserted in the fornices or vagina as they tend to produce abortion. There may be a difference of opinion as to the value of tamponage, but in our experience fear of producing abortion would not be a contra-indication. Has abortion really been caused in Edinburgh by this treatment, or is Mr. Lees quoting a traditional belief? The book concludes with an admirable pharmacopœia covering every possible medication that may be needed in the whole range of treatment of syphilis or gonorrhœa.

Mr. Lees's work may be recommended for its practical common sense no less than for its medical and scientific value.

ANATOMY OF THE CENTRAL NERVOUS SYSTEM.

Anatomie Topographique du Système Nerveux Central. By GEORGES GUILLAIN, Professor of Clinical Neurology, Faculty of Medicine of Paris; and IVAN BERTRAND, Director of the Laboratory of Pathological Anatomy, Clinique of Neurology, Faculty of Medicine, Paris. Paris: Masson et Cie. 1926. With 60 original plates. Pp. 322. F.80.

FOLLOWING the best traditions of the French school of neurology, the authors of this handsome atlas of neural anatomy rely for their hope of its practical usefulness on the necessity of pursuing the clinico-anatomical method in neurological instruction, a method in which they express their profound belief. Correlation of clinical phenomena with pathological findings has always been advocated in France as the ideal procedure if medicine is to advance, and pathology has its basis in anatomy. Leaving aside neurophysiology, and omitting all unnecessary application to clinical cases as being outside their immediate purpose, they have produced an atlas of pure anatomy, both macroscopical and microscopical, which is intended for the student of neurology. Anatomical details, so far from being minimised, are intentionally stressed, and accurately tabulated, in a series of 60 beautiful plates reproduced from original photographs and drawings, which as far as clearness is concerned leave nothing to be desired. With this guide at hand the student will find his way through the complexities of neuro-anatomy without difficulty. The text is simple and lucid, the arrangement logical; all the volume lacks is a decent index.

Taken as a whole, this new topographical atlas of the anatomy of the nervous system reflects the greatest credit on both authors and publishers, and will at once find its sphere of practical value in laboratory and study.

PERIPHERAL PALSIES.

Die peripherischen Lähmungen; Diagnostik, Untersuchungstechnik, Prognostik, und Therapie. By Prof. Dr. TOBY COHN, Berlin. Berlin and Vienna: Urban and Schwarzenberg. 1927. With 64 illustrations. Pp. 320. Mk.18.

THIS book on peripheral palsies, motor and sensory, cranial and somatic, reaches a high level of attainment. It is about equally divided into a general part, containing full descriptions of methods of examination, ætiology, pathological anatomy, prognosis, and treatment, and a special part, in which cranial and peripheral nerves are taken seriatim and their symptomatology minutely investigated. Due attention is given to the rarities as well as to the commonplaces, and this, together with a good index, a fine bibliography, and satisfying illustrations, makes it a volume well worth adding to the neurologist's library. The fact that new diagrams of the motor points on the skeletal muscles take the place of those of Erb, which have done duty for half a century, is of itself a comfort to the reviewer.

Detailed criticism of the work is rather out of place, seeing that it of necessity embodies a mass of anatomical and clinical data, through which one can scarcely hunt for possible errors or other sins, positive or negative; it is for reference more than for systematic perusal. We note in passing that the author inclines to the view of a sympathetic origin for some types of pain—e.g., that of causalgia—without as we think supplying adequate proof of the theory or realising sufficiently the equivocal results of some operations on periarterial plexuses. That cervical rib may occasion at one time a median, at the other an ulnar paralysis is duly recognised, but the partial character of the former is not sufficiently insisted on or illustrated. On this point differential diagnosis to some extent at least must depend.

THE RED NUCLEUS.

Die Bedeutung der roten Kerne und des übrigen Mittelhirns für Muskeltonus, Körperstellung und Labyrinthreflexe. By Dr. G. G. J. RADEMAKER, Utrecht. Translated into German by Dr. E. LE BLANC, privatdozent at the University of Hamburg. Berlin: Julius Springer. 1926. With 212 illustrations. Pp. 340. M.27.

Dr. Rademaker's masterly investigations of the functions of the red nucleus and the mesencephalon generally were published in Dutch, and the opinion was widely expressed that their appearance in another language somewhat more accessible to the average student of the nervous system was a desideratum. Hence the publication of the monograph in a German garb. It has already taken its place as one of the outstanding contributions to neurology of recent years, and as exemplifying in a striking fashion the value of the methods of the experimentalist. The subject is highly technical and possibly of somewhat limited interest, but its appeal to the specialist is unmistakable. Very briefly, the purpose of the research was to define and determine the anatomical centres and tracts responsible for the activities of some of the reflex mechanisms studied and described by Prof. Dr. R. Magnus. In this effort the author has succeeded very materially, and his conclusions have been accepted by other workers at the same problems. It is impracticable to give an adequate résumé of these in small space, and we shall be content to recommend its careful study to all who are interested in the minutiæ of midbrain anatomy and physiology.

LIFE AND EVOLUTION.

By WILLIAM TIBBLES, LL.D., L.R.C.P., M.R.C.S. London: John Bale, Sons and Danielsson, Ltd. 1927. Pp. 233. 6*s*.

Dr. Tibbles evidently has much wider interests than are indicated in that useful book "Foods: their Origin, Composition, and Manufacture," and he gives here revised versions of a number of popular addresses which range over a large field of soluble and insoluble problems. The first three chapters are on life, matter and force and cause and effect, and their general argument is that the materialistic interpretation of life is incomplete and unsatisfying, and that the cause of the world as we know it is God. The last five chapters are more direct and give an excellent elementary account of evolution, especially the evolution of man and of the English man in particular. The tale he tells is necessarily rather a dogmatic version of many matters on which there is no really certain knowledge, but it is straightforward, comprehensive, and interesting, and he takes the cheerful view that the study of the past is meant to help us solve the future. The whole forms a book which should be useful and stimulating to lay readers; it provides also some good outlines for popular lectures.

ULTRA-VIOLET THERAPY.

Ultra-violet Radiation and Actinotherapy. Second edition. By ELEANOR H. RUSSELL, M.D., B.S. Durh., and W. KERR RUSSELL, M.D., B.S. Durh., Hon. Actinotherapist Sun-ray Clinic, Newcastle-on-Tyne. With forewords by Sir OLIVER LODGE, F.R.S., D.Sc., LL.D., and SYDNEY WALTON, C.B.E., M.A., B.Litt. Edinburgh: E. and S. Livingstone. 1927. Pp. 429. 15*s*.

ENLARGED from 262 to 429 pages, the authors' second edition follows the same general lines as the first. The chief enlargement of the book appears to be in those sections devoted to the technique of therapeutic work and in the account of the various ailments for which ultra-violet radiation is useful. Illustrations are abundant throughout; no less than 65 are to be found in the two chapters devoted to a description of the various artificial sources of ultra-violet radiation. Readers requiring information on the technical or medical side of ultra-violet therapy will find what they want in this book.

Les Radiations Lumineuses en Physiologie, et en Thérapeutique. By A.-C. GUILLAUME. Paris: Masson et Cie. 1927. Pp. 515.

THIS book is unusual. The author warns the reader in his preface that he will here find no practical guide to actinotherapy nor manual on the subject, but rather a series of experimental studies bearing upon actinotherapy from different aspects; these studies take the reader into various fields, in some of which the way has sometimes been clearly found by well-designed experiments, in others there are still no signposts to give confidence to the casual wanderer.

Dr. Guillaume's approach to the subject is from the experimental side; he disclaims any special knowledge of actinotherapy. He is, in fact, more concerned with the setting of the stage than with the acting upon it, and indeed he adopts a critical attitude on what the actors choose for their play. However, a discussion as to what diseases should or should not be treated by actinotherapy is included in one of the final chapters. The chapters on the local and generalised action on the skin and body of various forms of radiation are exceedingly interesting, and the phenomena of sensitisation and of protection are fully described. A whole chapter is devoted to the fluorescence of tissues and their examination under beams of pure ultra-violet radiation.

The scientific scope of the book is wide, and it will be read with profit by many who have no special interest in the particular form of therapy that is considered. No reader can fail to be impressed with the efforts which are being made to elucidate some of the complexities inherent to the study of radiation in its effects upon living things.

JOURNALS.

QUARTERLY JOURNAL OF MEDICINE.—The April number contains the following articles: An Attempt at the Clinical Classification of Premature Ventricular Systoles, by Geoffrey Bourne. Twenty-eight cases were examined in which premature ventricular systoles occurred fairly frequently. The effects of exercise, amyl nitrite, and atropine upon their occurrence, in association with their relationship to heart disease and heart failure were investigated. The results showed, amongst other things, that standing increases the number of premature beats, exercise augments their occurrence after the deceleration period in cases with arterio-sclerosis or with coronary disease, the reverse holding good for normal or rheumatic hearts.—Observations upon the Circulation-rate in Man by the Ethyl Iodide Method, by H. Whitridge Davies and A. Rae Gilchrist. In 1925 Henderson and Haggard in America published a method for estimating the circulation-rate in man by inhalation of ethyl iodide. It can be rapidly effected and causes no discomfort to the subject. In the present paper the authors describe certain modifications of the technique, and the results of 118 observations on 18 individuals under varying conditions of posture, temperature, activity, and metabolism.—Fractional Analysis of the Gastric Contents: a Preliminary Note on the Variation of the Free Hydrochloric Acid and Total Chlorides in the Upper and Lower Parts of the Stomach, by Robert J. Duthie. Several observers have noted the variations obtained in fractional gastric analysis in the same individual on different occasions. The author here uses a double stomach-tube, the orifices being 8 inches apart. This was swallowed, and samples could then be obtained simultaneously from the pyloric and cardiac regions of the stomach. The position of the tubes was controlled by X ray examination. In the three cases examined differences in the free acid and total chlorides were found in the upper and lower regions of the stomach during the digestive cycle.—An Investigation of Gastric Function in Chronic Arthritis amd Fibrositis, by S. Miller and F. B. Smith. Two hundred and fifty cases of chronic arthritis, in whom the disease was still active, were investigated by means of fractional test-meals and examination of the fæces and urine for streptococci. Although achlorhydria and hypochlorhydria were found to occur five times more frequently than in health, yet their incidence was only slightly greater than that found by other observers in a series of other diseases. A similar slight preponderance of streptococci in the fæces, as compared with those obtained in other diseases, was also found. The diminished acidity is not therefore considered to be a primary factor in the ætiology of the disease.—The Effect of Mineral Acid in Acid-Base Regulation in Health and in Nephritis, by Geoffry C. Linder. The permanent readjustment of the acid-base equilibrium in the blood depends upon the action of the kidneys, and the author describes observations on the power of the kidneys in this respect in varying states of health and disease. Dilute hydrochloric acid was given to four normal people and to six patients with nephritis for periods of two to four days, and the changes in the blood and urine were studied. The results obtained are detailed in this paper, and in two patients whose renal function was greatly impaired severe acidosis was produced.—Heredity in Simple Goitre, by W. Russell Brain. In a series of six families there were 26 cases of simple goitre, and in two of these families cases recurred in four successive generations. In another series of five families 12 cases of simple goitre occurred, associated with congenital deaf-mutism. A hereditary predisposition does appear to be a factor in the ætiology of simple goitre in some cases, and the incidence of goitre is further considered in relation to Mendelian laws.—Radium and the Blood Cholesterol, by Charles E. Brunton. The blood cholesterol in a series of patients suffering from cancer was found to be about normal. No definite variation was found in the blood cholesterol of cancer patients after treatment by diathermy or by radon.—The Clinical Duration of Saccular Aortic Aneurysm in British-born Subjects, by G. H. Colt. Seven hundred and seven cases of saccular aortic aneurysm have been collected from the literature, and their clinical duration noted from the first date of the longest recorded symptom. The cases have been considered statistically, and it is hoped that the graphs prepared will be of value for prognosis.—The Effect of Administration of Parathyroid on the Serum Calcium, by C. P. Stewart and G. H. Percival. The serum calcium was estimated in 11 cases before, during, and after the administration of parathyroid (Martindale). In every case the calcium was stationary, and normal or slightly above normal before the parathyroid was given, but rose as the result of the parathyroid administration.—The journal concludes with an account of the twentieth annual general meeting of the Association of Physicians of Great Britain and Ireland, held at Newcastle-upon-Tyne in May, 1926.

THE LANCET.

LONDON: SATURDAY, MAY 7, 1927.

QUEEN CHARLOTTE'S HOSPITAL.

WE publish in another column a weighty manifesto from 11 obstetric surgeons who, under the title of "Save the Mothers," plead with the public for a quarter of a million of money for the erection of new buildings to provide more beds and greater facilities for scientific training in connexion with Queen Charlotte's Hospital. As everyone knows, the mortality from childbirth is still deplorable, and the significant chart, which appears in the manifesto, reveals at a glance that this mortality has shared neither in the reduced mortality among women from all causes, or in the reduced infant mortality which has been an increasingly marked feature of the vital statistics of the present century. Many of these maternal deaths are undoubtedly preventable, and while an addition to the beds at a centre like Queen Charlotte's Hospital would mean a great deal, far more would be meant by larger opportunities for the training of medical students and of student midwives in the whole science of midwifery and obstetrics. For it is admitted that medical students are still educated in these subjects, as far as the metropolitan medical schools are concerned, in a desultory manner; and this must remain the case, although the strenuous efforts of many teachers and the improvement in results have recently been apparent, as long as hospital conditions remain so imperfect. There is no doubt that medical students do not obtain the same opportunities for clinical education in midwifery and obstetrics that they do in other branches of medicine, for the absence of sufficient maternity wards to which the students could have access hampers them and their instructors alike.

In the study of midwifery and obstetrics, as it now obtains in this country, there are things of the highest importance which require general consideration—things which affect the public and the medical profession alike. There are large factors inherent in the practice of to-day which affect throughout the treatment of difficult labour and their significance is not duly felt. They have been set out with detailed explanations by a group of authorities in an Extra Number of THE LANCET [1] some two years ago, and the common teaching of all was that the practice of midwifery now means, above all things, the avoidance of sepsis and the early recognition of abnormal conditions, notification of sepsis becoming necessary when the first line of defence, prevention, has been breached. But is it sufficiently considered that the medical man, face to face with emergency, is little aided by the knowledge that the situation need not have arrived if due preventive methods had been taken? And the only way in which the knowledge of what preliminary precautions ought to be observed can become the general property of practitioners or midwives is to offer opportunities for obstetrical consultations, where apposite bacteriological examinations have been arranged for, where the necessary number of maternity beds can be found, and where a system of antenatal care can be organised as a model. "The antenatal care of pregnant women has been demonstrated to be one of the most valuable of all forms of preventive medicine," says the surgical manifesto. "It must be considered as the most important modern development of obstetrics, and one of its chief activities. Failure to provide facilities for antenatal treatment is one of the most conspicuous pieces of evidence that maternity hospitals are not keeping pace with the movement, and experience emphasises more and more strongly the vital need of preventive methods." These words furnish the reason why so many women still die in childbirth or suffer ills arising from the discharge of a natural function, for it must be remembered that, on the top of the maternal mortality, a large percentage of all the conditions for which women seek relief either in hospital or in private practice are definitely connected with the ordeal of childbirth. More maternity beds are urgently required in order that the education of those concerned in the actual care of the women should be properly conducted, and that the teachings of modern science should become part and parcel of routine practice.

The appeal issued by Queen Charlotte's Hospital demands the public help in a direction where all can appreciate its urgency, and the authorities in asking for £250,000 to be used for the construction of new buildings and for the promotion of research are able to show, not only the necessity for finding the money, but the proof that the money, when found, can be immediately and definitely employed for its objects. With the capital sum which it pleads for the hospital will provide modern wards, fully equipped, for another 75 beds; single private rooms for middle-class paying patients; completely equipped pathological laboratories; special facilities for research into childbirth fever; and the machinery for training more doctors, students, and nurses. It is proposed, we learn, that the money should be shared almost equally by endowment, and building and equipment. As the freehold of the adjoining ground is already owned by the hospital, no time will be wasted in the expensive and wearisome task of securing a site. Those who give promptly—and there should be many, for the appeal is to manifold sympathy—will see a prompt result.

LOOKING AT THE SUN.

IN clear weather it is only at sunrise and at sunset that we can with comfort look directly at the sun with the unprotected eye. At these times the great distance of atmosphere through which the sun's rays have to travel before reaching our eyes serves to diminish their intensity to a point within the limit of safety. When the sun is high the eyes are protected from glare by the lid and brow, and if we attempt to look up at the sun's disc we are dazzled and instantly turn our eyes away. If in spite of being dazzled we persist in looking, we run a great risk.

This risk, as Sir ARNOLD LAWSON and Mr. A. L. WHITEHEAD pointed out in an article in our columns last week (page 949), is one which is likely to be taken

[1] Modern Methods in Abnormal and Difficult Labour. THE LANCET Extra Number. Pp. 140. With many illustrations. 12*s*.

thoughtlessly on June 29th next when many people in North Wales and Northern England are hoping to enjoy the only chance in their lives of seeing the corona of the sun surrounding the black disc of the moon. Even after any ordinary partial obscuration of the sun a few cases of "eclipse blindness" come under the observation of ophthalmic surgeons. The number may be very much larger as a result of the widely advertised total eclipse of June, unless the danger be equally widely advertised. The visible and infra-red rays from the sun passing for the most part unchanged through the cornea and lens are focused approximately on some part of the retina whenever the eye is at rest and the sun within the field of vision. Reaching the retina, these rays pass through its superficial layers without doing any harm until they reach the pigmented epithelial cells at the back, where they are degenerated into heat, which gives rise to a thermal lesion (an ordinary burn) spreading inwards to the retinal tissues and outwards to the choroidal vessels. Fixation of the sun's image on any peripheral part of the retina must, however, be a very rare occurrence, and a point lesion, if it should occur, would probably give rise to no inconvenience. But at the macula or central spot of distinct vision the case is quite otherwise. Here in the normal eye the rays are accurately focused and at a moment of keen interest discretion may be thrown away and fixation of the sun's image occur. The macula is the most vulnerable part of the retina, for at this spot the retina is thinnest, all the layers having nearly disappeared except the cones and the pigmented epithelium, while there are no blood-vessels which supply the central spot direct and might help to distribute the heat. Hence, if the warning sensation of dazzle is disregarded, a thermic lesion may result, leading to permanent damage at the macula, with pigmentary changes which can be seen with the ophthalmoscope; and at the macula even a point lesion will lead to a visible blank in the field of vision. It is thus the red and yellow rays from which the retina runs the chief risk. The ultra-violet rays, it is true, cause conjunctival trouble and pain, but they are, it seems, largely absorbed by the cornea and the crystalline lens and therefore do not reach the retina in any dangerous quantity except in young children in whom the lens is very transmissible, or in those whose lens has been extracted by operation.

We dwell upon this danger to the unprotected eye by no means because we wish to discourage anyone from seeing what he can of the eclipse, but rather to remind would-be astronomers, and especially all who have the care of children, that the danger is as real as the safeguard is simple. All that is necessary for a brief survey of the eclipse is to interpose a piece of smoked glass or of fogged photographic film of such a density that the sun when seen through it is no brighter than the setting orb. The photographic film is the safer, as the smoked surface rubs easily off the glass when in use. A further refinement in precautionary equipment is described in Sir ARNOLD LAWSON and Mr. WHITEHEAD'S note. Untreated film, they insist, does not afford sufficient safeguard for prolonged sun-gazing. It may remove the glare, but it does not prevent the ultra-violet burn of the anterior structures of the eye, and they have collaborated in the production of a photographic film so treated that all the short waves are cut out completely, made up in a mask at a price designed to bring it within reach of nearly everyone. We hope these precautions will be brought to the knowledge of all the schools and families in the country and that no one will suffer unwarned from the result of laudable curiosity.

MODERN MEDICAL LIBRARIES.

WE have drifted far from the days when the bibliothecarius, often a creature of pomp, pedantry, and quaint punctilio, and always a man of high and curious learning, corresponded on equal terms with a Leibnitz or a Milton. Such a man in the late seventeenth century was the famous scholar, Richard Bentley, who was King's librarian at St. James's before the days of the British Museum. He became Master of Trinity in the year 1700, but may be said to have inaugurated modern classical scholarship when still a librarian. The roll of honour of librarians can be vastly extended, for it ranges down to the days of Richard Garnett, Bradshaw of Cambridge, and the present Pope, and numbers in its middle period such names as Lessing and Casanova. Doubtless the ancient librarians often dozed aloof, or like erudite silkworms spun their own webs of learning, undisturbed by readers. Now all that has been changed. The modern librarian is above all things practical. Indeed, in his laudable desire to be of use to an ever-growing host of students, as opposed to scholars, he is in danger of specialising in routine. This becomes almost painfully manifest when we consider an exhaustive report on "Methods and Problems of Medical Education" recently issued by the Rockefeller Foundation of New York. In this bulky pamphlet six medical libraries in different parts of the world, ranging from China to beyond Peru, to Brazil, and thence to Harvard and the Canadian Universities, have been fully reported upon by modern and able librarians. The general impression that will be left on the mind of any lover of a noble European tradition is that the library of to-day is a sternly efficient machine, an affair of typing, telephony, electricity, but hardly a home of abstruse research and reverent bibliography. We hear little in this report of rare and precious works. Indeed, in one fine American institution, all books prior to the nineteenth century are referred to by a modern lady librarian as "antiques," and the classification would appear to put John Hunter and his brother, also Sydenham, and many other permanent luminaries, in a fading glow. One of the glories of the Rockefeller enterprise is the Library of the Peking Union Medical College. Here there are 817 Chinese books, a surprisingly large number when we consider that at the beginning of the nineteenth century only one work on medicine produced in China destined to be of practical utility had come into public notice—there were, of course, others, and more may be yet heard of them. The one specially referred to is a translation by Sir George Staunton of Alexander Pearson's work on vaccination, published in Chinese type and illustrations at Canton in 1805. The title was translated for us by the late Sir Robert Douglas, the sinologist, and it ran thus: "English recently issued Vaccination Rare-Book." Jenner's discovery appealed to the Chinese almost from the first, and their century-long practice of vaccination is in strange contrast with their folk-medicine and the inclusion of tiger's eyes and other strange ingredients in their pharmacy. How far the silken-robed figures of Chinese students gliding about the medical library of Peking are bent on modern scientific errands is perhaps matter of legitimate conjecture. By all accounts they are serious students, and to-day every opportunity is given them for research among some 4300 volumes of

European medicine and a great number of journals and pamphlets. All the six libraries described in the Rockefeller report are, indeed, conducted with the highest kind of medical knowledge in view and on the most advanced modern principles.

The medical profession is perhaps better supplied than any other with exhaustive catalogues and library helps of every kind. In the fine library of the Harvard Medical School there are some 45,000 volumes, over 100,000 pamphlets, and the number of current periodicals is over 400. But the student is not left at sea among all this, for "the attendants in all the rooms answer all inquiries and try their utmost to supply the information desired." The librarians, Dr. Elliott P. Joslin and Frances Whitman, "take pleasure in giving assistance." We can well believe it, and the same may be said of medical librarians all the world over. The library of the Washington School of Medicine, St. Louis, under the skilled management of Miss Etta Lawrence, now numbers well over 33,000 volumes, having risen from a nucleus of 3000 volumes in 1910. Unlike most very modern collections, this admirable library, "classed with the best libraries of medical schools," possesses antiquities in the shape of the Beaumont Collections. These consist chiefly of the note-books in which for years Dr. William Beaumont, the pioneer American physiologist who was also F.R.C.S. England, set down his observations of the workings of the gastric juice through the fistula in the abdomen of Alexis St. Martin. A library which promises very well, though it is at present small, is that of the Queen's University, Kingston, Ontario. It forms part of the large university library of 175,000 volumes. At McGill University the medical collection is extensive, amounting to some 60,000 volumes. It is more than a century old, having been founded in 1823. In 1907 the Osler Library was erected, and here are housed the 7000 odd volumes, which it was the life-work of that fine bibliophile, Sir William Osler, to collect. The Osler Library has a noble appearance worthy of him whom it commemorates. The Rockefeller Foundation has issued the report in pamphlet form, as the sixth instalment of a larger work, which will doubtless contain descriptions of the famous medical libraries of London and of the Surgeon-General's Library at Washington, as well as of those of the Continent of Europe.

ADDITIONAL INSURANCE BENEFITS.

THERE is gratifying evidence that the scheme of the Insurance Acts is now being developed along preventive lines. Last month, in reply to a question by Sir John Power in the House of Commons, the Minister of Health gave some interesting figures showing the extent of additional benefits granted to insured persons during the year 1926 (THE LANCET, April 23rd, p. 901). During this twelvemonth a sum of more than one million pounds was expended on dental treatment and nearly a quarter of a million on treatment in hospitals. Much of this dental treatment is of a preventive nature and, along with the medical inspection of school-children and dental treatment at school clinics, it cannot fail to react in the course of time on the incidence of sickness. The amount spent on treatment in hospitals and the £7000 on provision of nurses might well have been much larger, for both of these are essential services for the restoration of the sick worker to normal health. No information was given as to the amount of additional benefit given by way of increase in the ordinary cash benefits, and so no material is available to judge what relation this outlay bears to the one-and-a-half millions spent on specified additional benefits, but it is to be hoped that the latter fund will go on increasing, when there will soon be manifest some improvement in the efficiency of the workers and some reduction in the time lost from incapacity. The figures given by the Minister of Health are evidence that the problem of preventing sickness is being seriously tackled by the approved societies.

Annotations.

"Ne quid nimis."

THE BRINE BATHS OF DROITWICH.

THE ancient township of Droitwich lies in a hollow of the beautiful Worcestershire hills, and 200 feet beneath it is the inexhaustible bed of salt which has provided brine for commercial and therapeutic use since Roman times. The water, which used to well up to the surface but now has to be pumped, is unique among the mineral springs of the world in its concentration—ten times stronger than sea-water, 40 per cent. stronger than the waters of the Dead Sea, and among mineral springs approached only by those of Rheinfelden and Bex in Switzerland. The water is only available on the spot, for Droitwich believes, with much show of reason, that the full effects of the brine cannot be obtained from redissolving the evaporated salt, and that the high degree of radio-activity present in the fresh brine would be dissipated by evaporation or during long transit. There is little, if any, accurate knowledge as to the precise action of brine baths on the various systems of the body. Salt-water baths are reputed to have a much more stimulant effect than have ordinary baths of the same temperature, and Droitwich repeats in season (and perhaps out of season) the story of the rediscovery of the stimulating properties of the brine when the contents of an evaporation pan were used in emergency for a collapsed cholera patient a century ago. The influence of salt water on metabolism has been the subject of much experiment and discussion, but, as Dr. Huggard said 20 years ago,[1] no very positive conclusions have been obtained, and the same is largely true at the present time. Testimony to the chemical activity of the brine is borne by the corroded taps and discoloured walls of the old baths, which the new installation completely masks by its vulcanite fittings and vitrolite panels. The buoyancy of the water is such that the immersed body or limb is completely supported, so that stiff and partly paralysed muscles are enabled to move on their own initiative with little expenditure of energy. Active movement of this kind is a unique feature of the brine bath, and war-time experience not only suggested its great utility but the possibility of its taking the place to a large extent of massage and passive movement. The doctors of Droitwich are all busy general practitioners, with little time to devote to the why or the how of the good results of which they are daily witness, and at his visit last week, recorded on another page, Mr. Neville Chamberlain gently chid them for an omission which may be preventing Droitwich from being useful on the scale which it merits. Mr. Chamberlain was careful to explain that he was speaking as one of the trustees of the Corbett Estate, to which the bathing establishments belong, and not as Minister of Health; but the local medical profession will do well to take his words to heart and in the course of time provide good evidence for the faith which is in them. There should, at all events, be no lack of occupation for a full-time biochemist at Droitwich.

SPLANCHNIC ANALGESIA.

SPLANCHNIC analgesia has been in use since 1914, when M. Kappis first reported on it at the Surgical Congress at Berlin. Since then H. Braun (1919) and G. Labat have made important additions to the literature of the subject. In our own columns[2] a record of 91 cases has been published by O. S. Hillman and R. E. Apperley. There has been time, therefore, for the technique of the method to be systematically and thoroughly established and for its

[1] A Handbook of Climatic Treatment including Balneology. By W. R. Huggard. Macmillan and Co., 1906.
[2] THE LANCET, 1925, i., 863.

value to be fairly well appraised. A recent article in *Surgery, Gynecology, and Obstetrics* (April 27th, Part I.) summarises no less than 2475 cases and also goes fully into the physiology and the anatomy of the procedure. It is obvious that although splanchnic analgesia is of great value in extensive operations within the upper abdomen its use should be limited to these, that it should be selected with due consideration, and that its application must be conducted with the greatest care. If these conditions are not fulfilled there are fatal pitfalls into which the anæsthetist may blunder, and these are well exemplified in cases quoted in the course of the article to which we refer. The accumulated experience of various surgeons and anæsthetists has resulted in showing the advisability of a weak novocaine solution (many prefer ½ per cent. to 1 per cent.), the absolute necessity of making sure by aspiration before injection that a vein has not been entered, and for making allowances for the constant but temporary lowering of blood pressure which the injections produce. It is interesting to notice that whereas in this country the injections are used in conjunction with a light general anæsthesia induced beforehand and maintained throughout, on the continent a general anæsthetic is not employed until called for by symptoms of pain on the part of the patient.

TRAFFIC IN WOMEN AND CHILDREN.

WHEN the League of Nations was established an article was inserted in the Covenant under which the members of the League undertook (subject to past or future international conventions) to entrust the League with the general supervision over the execution of agreements with regard to the traffic in women and children. In June, 1921, an International Conference at Geneva, attended by representatives of 34 countries, made various recommendations. It suggested a new draft convention; it proposed to replace the words "White Slave Traffic" with the words "Traffic in Women and Children," so as to make its proceedings apply to all races alike; it asked that Governments should be invited to make annual reports on the conditions of such traffic; and it requested the League Council to set up an Advisory Council to deal with this subject. These proposals were all duly carried into effect. The Advisory Council has issued five reports; in 1923 it passed a resolution recommending that, pending the abolition of the system of State regulation, no foreign woman should be employed in the trade of prostitute, or should carry on such trade, in any licensed house; some countries where licensed houses exist are said to have acted upon this recommendation. In the same year the Advisory Committee proposed issuing a questionaire to Governments on the topic of the licensed house system and its effect on the traffic; this proposal also was carried out, and resulted in obtaining much useful information. Finally the Committee recommended that the Council should appoint a body of experts to investigate conditions. This, too, was done with the aid of a generous offer from the American Bureau of Social Hygiene, and Part I. of the experts' report is now available. It contains material gathered in 28 different countries after interviewing some 6500 persons who were believed able to afford information; about 5000 of these were connected with commercialised prostitution, and a large number consisted either of prostitutes or *souteneurs*. Certain routes of traffic between Western Europe and Central and Southern America were investigated; inquiries begun in Southern America were extended to Central and Northern America, to countries bordering on the Mediterranean and to certain countries on the Baltic and North Seas. The report is a frank document, likely to fulfil its purpose of stirring up public opinion and of strengthening international machinery by effective coöperation.

As in other instances where Great Britain has agreed to incorporate international standards in its legislation, it is possible to claim that our national standard is in advance of the international. An Englishman's home is his castle, but in English town life the opinion of the neighbours has always been strong enough to stimulate the law to suppress nuisances. It was at all material times a common law offence in this country to keep a brothel, because (in Sir Edward Coke's phrase) such conduct draws together the debauched and dissolute and corrupts public morals by the open profession of lewdness. In 1650, during the austere times of the Commonwealth, an Act was passed "for suppression of the deadly sins of incest, adultery, and fornication," under which the keeper of a common brothel or bawdy house was to be punished at the first offence with public whipping and branding on the forehead with a hot iron, and at the second offence with death. There was never in modern England any official acceptance of the principle of licensing or toleration of brothels by the State. The legislation which began with the Contagious Diseases Prevention Act of 1864, "for the better prevention of contagious diseases at certain naval and military stations," afterwards replaced by the Acts of 1866 to 1869, was repealed after a now forgotten controversy in 1886. Public inquiry into allegations of traffic in girls from England to continental brothels led to the passing of the Criminal Law Amendment Act of 1885 which dealt severely with procuration. This Act and its successors have killed the traffic from England to the continent, and legislation such as the Children (Employment Abroad) Act of 1913 and the Theatrical Employers Registration Act of 1925 (which penalises employers who abandon their performers and leave them stranded without pay), as well as enactments respecting health and unemployment insurance and pensions, must play some part in preventing women being driven into the ranks of prostitution by mere economic pressure upon themselves and their dependent relatives. It is not easy to see how any further legislation can add safeguards in this country, though possibly additional precautions can be taken administratively by vigilance in the matter of passports and by such measures as are being taken to grapple with the international traffic in dangerous drugs. The work of the League of Nations will, of course, receive support in civilised communities, though not a little had been achieved before the League came into existence. Under the International Agreement at Paris in 1904 the high contracting parties pledged themselves to certain administrative measures, and under the Paris International Convention of 1910 the signatory nations undertook to penalise and prosecute vigorously the procuration of women and girls. The Convention of 1921 contains an article binding Governments to adopt such administrative and legislative arrangements in connexion with immigration and emigration as will check traffic in women and children, and in particular to make regulations for the protection of passengers on emigrant ships at the points of departure and arrival and during the journey. The recent report of the League of Nations experts mentions some of the legislative provisions made for this purpose; it also indicates the association between commercialised prostitution and the illicit sale of alcohol, traffic in obscene pictures and books, and the practice of sexual perversion. Success in suppressing these latter evils depends, of course, upon the firmness and integrity with which a country's laws are administered.

SYPHILIS IN PREGNANCY.

Dr. J. R. McCord, of Atlanta, has recently published a short account [1] of 300 consecutive pregnancies in negro women whose Wassermann reaction was "four-plus." Counting abortions, stillbirths, and neonatal deaths, some 34 per cent. of the pregnancies ended in disaster. The figures make it clear once more that antisyphilitic measures during pregnancy are desirable, for among the 99 women who had prenatal treatment the percentage of accidents was halved—and this in spite of the fact that 43 of them attended

[1] Amer. Jour. of Obs. and Gyn., March, 1927.

only three times or less for treatment. It comes as a surprise to find Dr. McCord saying that he has no hesitation in employing antisyphilitic remedies during pregnancy, for in London their use has been a routine measure for ten years at least, and no reason has been found why the drugs should not be administered if necessary up to the very day of delivery, provided that due attention is paid to the condition of the urine. It is also surprising to find that mercurial inunction has so large a place in his scheme of treatment, since it would be regarded with disfavour by most expectant mothers in this country. Its use may partly account for the poor attendance at the venereal clinic, but this may be inevitable in treating negroes, which is the more reason for using powerful drugs whenever there is an opportunity, especially as syphilitic infection in the negro is said to be more virulent than in white men. There is evidence from other sources, however, that mercurial inunction is in considerable favour in the United States, and of course the results can be excellent when it is given with skill and perseverance. Dr. McCord says that in his service 51 per cent. of stillbirths are due to syphilis—a proportion greatly exceeding that found in any hospital practice in Great Britain and suggesting strongly the need for intensive treatment, and therefore for intensive propaganda, among the coloured population. The 300 cases form part of a series of 600 syphilitic pregnancies which he has now investigated, and amongst the 600 about 35 per cent. of the births were premature. Of 320 placentas examined 43·5 per cent. were noted as positive for syphilis.

THE LORD CHIEF JUSTICE ON BUREAUCRACY.

THE Minister of Health has occasionally been criticised for obtaining by means of Acts or Regulations the power of acting as judge to the exclusion of the jurisdiction of the law courts, and for other bureaucratic practices. The Lord Chief Justice has recently commented upon a further example of this tendency. Under Section 67 of the Rating and Valuation Act of 1925 the Minister is given a general power of removing difficulties in bringing this extremely complicated enactment into operation. For this purpose he may make orders of various kinds, and his orders may even modify the provisions of the Act itself "as may appear to the Minister necessary or expedient for carrying the order into effect." These words, remarked Lord Hewart, indicate the high-water mark of legislation of this sort. "Imagination fails to contemplate the extent of the power given to the Minister; he may cut the Gordian knot in any way he pleases." These observations were made during the case of Rex *v.* the Minister of Health, *ex parte* the Wortley Rural District Council on April 29th. The Court refused to quash one of the orders made by the Minister, but the Lord Chief Justice was not unconscious of the fact that, if the Court had decided to quash the order, the Minister could have attained his object on the following day by making an order under Section 67 "to remove the difficulty."

No doubt the Minister can take care of himself, but it is only fair to point out that there is nothing conspicuously novel in this statutory power to remove difficulties by departmental order when any new and intricate legislation is introduced. The power will be found in Section 78 of the National Insurance Act of 1911, in Section 45 of the Unemployment Insurance Act of 1920, and in Section 36 of the Contributory Pensions Act of 1925. It was inevitable that it should occur in a Rating Act which was likely to interfere with all sorts of conditions governing local assessment committees, local officials, and local differential rates—matters depending upon a great variety of local Acts. Moreover every such order under the Rating Act has to be laid forthwith before both Houses of Parliament, and for 28 days thereafter any vigilant Member can move that an address be presented to His Majesty for the annulment and avoidance of the order. Engrossed in his judicial duties, Lord Hewart can hardly be expected to keep an eye upon all Bills or orders laid before the House of Lords. Other critics might be reminded that the best opportunity of checking bureaucracy is to make an effective protest before—and not after—Parliament confers a bureaucratic power. Meanwhile, having had occasion in the past to complain when bureaucratic statutes or regulations seek to deprive the medical profession of its right of appeal to the law courts, we are glad to think that we can reckon upon the support of the Lord Chief Justice when that issue is next raised.

THE HEALTH OF THE ROYAL AIR FORCE.

THE report[1] on the health of the Air Force during 1925 has been recently issued, and is distinguished from those of the other services by the detailed attention it gives to hygienic conditions everywhere, and by the multiplicity of tables showing the age- and trade-incidence of disease amongst the personnel. The average strength in 1925 was 33,028, and the cases of injury and disease amounted to 68·1 and 379·1 per 1000 respectively. The corresponding figures for the previous year were 73 and 391, so that a satisfactory decrease has been recorded; and the same is true for the death-rate, 4·2 per 1000 (last year 4·5), and the invalid-rate, 9·3 per 1000 (last year 9·5). Amongst officers the rate of admission for disease is slightly lower than amongst other ranks, but it is much higher (92·0 per 1000) for injury. Dysentery was most frequent at Hinaidi in Iraq; two-thirds of the cases seem to have been diagnosed in the laboratory, and 10 out of 160 were amœbic. Of enteric fever there were 41 cases, leading to four deaths, and it has been decided that in Iraq inoculation shall in future be done every year, as the protection diminishes. Influenza was more prevalent than in the Army, and especially attacked the apprentices, whose age is 14 to 17. Two primary cases of malaria occurred in England, whilst abroad the number of cases fell to 99·3, the maximum being at Basra; 90 per cent. of the cases seem to have been diagnosed in the laboratory. Pneumonia (1·6 per 1000) was twice as prevalent abroad as at home. Sandfly fever, whose incidence in the forces abroad was 75·5 per 1000, was worst at Mosul but is generally decreasing. Tubercle of lung accounted for 14 cases at home and 13 abroad, the incidence of the disease in the whole force being 0·8 per 1000. The incidence of venereal disease is the lowest yet recorded, showing a further reduction from 22·3 per 1000 in 1923 to 19·9 in 1924. At home the incidence fell from 19·2 to 16·8, and abroad from 30·0 to 27·9. During the same period the primary incidence—viz., the number of new cases per 1000—fell from 16·3 to 15·1. In every 100 infections freshly acquired 83 are gonococcal, 8 syphilitic, and 9 due to soft chancre. The reduction is ascribed to preventive measures, further developed this year; even greater success might have been hoped for them. Ulcers of the stomach and duodenum, becoming so frequent in Army and Navy, are not mentioned, but appendicitis caused 6·6 admissions per 1000 men. There were 93 cases of non-specific urethritis. Injuries from athletics formed 38 per cent. of the total injuries; 6·9 per cent. were flying accidents, in which 41 officers and 13 airmen were killed. The total number of casualties in flying accidents was 54 killed and 101 injured, as against 69 killed and 100 injured in 1923. Four deaths by wounds in action occurred in India, where two aeroplanes were shot down. The trade group which had most sickness was that of drivers, with most venereal disease and many injuries, but this group had the fewest admissions for influenza and infections of the upper air passages. All general duty officers were assessed for physical fitness at the end of the year, and 91 per cent. were found fit for full flying duties. In his letter prefatory to the report, Air Vice-Marshal David Munro, Director of Medical Services, states that this is the highest figure so far recorded. The chief cause for rejection of recruits

[1] London: H.M. Stationery Office. Pp. 71. 3*s*.

was "loss or decay of many teeth," and for rejection of apprentices, defective vision. Aural disease comes fourth in this list. Twelve officers and 50 airmen passed the short course in hygiene, and five medical airmen passed the long course. Hygiene and sanitation will be included in the new promotion examination for officers. Details are given of improvements being made in barracks, in drainage, and in water-supply. It is noted that since boots of naval pattern have been on issue no case of hallux rigidus has arisen among the apprentices. These boys are measured and weighed twice yearly, and the rate of growth is satisfactory. During the year 1925, 176 casualties were transferred by air in Iraq, compared with 81 in 1924; this form of transport is now used as a routine. The report contains information about the R.A.F. Central Pathological Laboratory at Halton, and the other six hospital laboratories, and there are returns of the dental work done.

WOLF BOYS.

THAT the latest story of a wolf boy should come from Allahabad is neither surprising nor historically irrelevant, for this great Indian city is in the United Provinces of Agra and Oudh, and no other part of the world has been so prolific in the production of these creatures; indeed, in recent times they have appeared nowhere else. To Major-General Sir W. H. Sleeman, K.C.B., resident at the Court of Lucknow, must be accorded the credit of their introduction to the notice of Europe, for it was in 1858 when he published in London his "Journey through the Kingdom of Oude" that England first came to know of their existence. In Vol. I. of this work there is contained a number of stories of wolf boys written in a live and natural manner, and reproducing the style and tone of thought of the Hindustanee narrators. General Sleeman proved himself a good listener, and when the penchant of the gallant soldier became known many there were who assisted him not only wisely but too well in his researches, for all observers maintain that your Indian is ever an adaptable and an imaginative being. In a letter to the *Lucknow Witness* of June 19th, 1874, this explanation of the high local incidence of wolf boys in Oudh is confirmed. The writer of the letter, who was employed in the Oudh Frontier Police and served under General (then Colonel) Sleeman, signs himself as "O. P. A." In his letter he states that "when the Oudh Durbar officials discovered what they considered to be a 'shauk' (desire) of the resident, they hastened to produce several unfortunate idiots, positively declaring them to be 'wolf boys.'" There is no doubt, says this writer, that the natives believe in the existence of these wolf-nourished creatures, but, he asks, "is it not probably a true solution of the mystery which, for so many years previous to the annexation of Oudh, has enveloped the history of these unfortunate creatures, to suppose that they were simply idiots who, straying away from the place of their birth, wandered, driven by hunger from place to place in search of food; their parents or friends, themselves perhaps poverty-stricken, not being over-anxious to search for and bring back to their homes such burdens on their scanty means?"

As long ago, too, as August 14th, 1873, there appeared in the *Edinburgh Courant* the following intimation: "A novelty, in the shape of a 'wolf boy,' has just arrived at Lucknow, and has been handed over to Dr. Whishaw to undergo a process of taming in the lunatic asylum..." On reading this Dr. Ireland, the medical superintendent of Larbert, and noted at the time for his wide and skilled knowledge of mental deficiency, wrote to Dr. Whishaw "begging him to give some information about the truth of this case which, for the first time, seemed to have come under the observation of one of our own profession." Dr. Whishaw's reply was disconcerting. "The boy is fourteen," he wrote, "and an impostor; he was made up to get money under false pretences. I found him out ... I believe never in this world has there been an instance of a child being brought up by wolves, and I cannot understand how anybody can believe in such a thing. It is a common fable in all Indo-European languages... The majority of wolf boys are idiots, taken by their parents and left near some distant police station." At about the same time Dr. Ireland was preparing his "Inquiry into Some Accounts of Children being Fostered by Wild Beasts," which appeared in print in July, 1874. In a subsequent publication dated October of the same year, he quotes the letter by "O. P. A." in full, but it is obvious that he received a copy of it only after he had concluded his original "Inquiry," and that he publishes the letter in confirmation of his own conclusion that "the same explanation seems to do for them all, that idiots have occasionally been found straying in the woods, and that people accounted for their wildness and stupidity, their want of speech, and their abnormal sense of taste, by supposing that they had been brought up by or lived in the company of wild beasts." To complete the story, on Nov. 7th, 1874, there appeared in the *Academy*, a paper on the same subject, by Prof. Max Muller, but no mention is made therein of these researches. "The cases put together by Prof. Max Muller," writes Dr. Ireland, "are the same as those already mentioned in my article, which had not the good fortune to attract his notice"; apparently the examination and conclusion of the medical superintendent of Larbert were distasteful to the speculative aspirations of the learned philologist. Nevertheless, the wolf boy of Allahabad appears to afford additional evidence in favour of Dr. Ireland's contention, for the facts, as published in the *Times* on April 26th last, show that he has many of the characteristics of an epileptic idiot. "He has," says the report, "a prodigious appetite. He is subject to fits. At times he is ferocious... He has also bitten himself... He is said to betray certain instincts even lower than those of his alleged foster parents. He has a scar on the left side of the face... and this has had the effect of dragging the eye down to an unnatural expression..." Nor need this facial scar have been caused by a wolf, as idiot and epileptic children, especially of rustic, ignorant, and careless parents, are liable to many serious injuries, and some of these do result in hideous scars.

THE PREVENTION OF SCARLATINAL NEPHRITIS.

ALTHOUGH scarlet fever is nowadays a comparatively mild disease, with a mortality of less than 1 per cent., its sequelæ cannot be regarded as negligible. The communication by Dr. A. Osman and Dr. H. Carter, reported on p. 971, has focused attention on the incidence of nephritis as a complication of scarlet fever. Since scarlatinal nephritis is not commonly seen, there is a tendency to regard it as practically non-existent, and to take no steps towards its prevention. However, if all cases of scarlet fever at the various fever hospitals were examined, it would be found that albuminuria is present in from 3 to 5 per cent. and nephritis in from 1 to 2 per cent. Osman and Carter noted an incidence of 5·5 per cent. of albuminuria in 336 cases, while in another series of 316 cases nephritis was present in 2·9 per cent. The presence of albuminuria is in itself significant. It implies damage to the renal tissue, and is a warning to the clinician that the more severe complication of nephritis may ensue if measures are not taken to assist the threatened kidneys. Nephritis with red blood cells and casts in the urine is a serious complication, not only from the immediate danger of uræmia, but also from the subacute or chronic inflammatory processes which may persist in the kidneys. The fact that scarlet fever is a mild disease has no bearing on the severity of the nephritis which may arise as a complication; even a general average of 1 per cent. of nephritis and 5 per cent. of albuminuria is not inconsiderable when the total incidence of scarlet fever on the population is considered. The figures of Osman and Carter indicate that the adminis-

tration of alkalies does diminish very considerably the incidence of albuminuria and nephritis, and their views should interest those whose province is the treatment of infectious diseases.

SIR GEORGE HUMPHRY, ANATOMIST AND TEACHER.

THE last issue of the Annals of Medical History contains a vivid sketch, by Sir Humphry Rolleston, of Sir George Murray Humphry, professor of anatomy in the University of Cambridge from 1866 to 1883, and thereafter professor of surgery for 13 further years. Humphry has been dead for 30 years, and that is a long time in a busy world for the personal memory of any man to survive, while Humphry's particular section in that world has undergone a revolutionary transformation during the period. But his sound work has passed into scientific history, while his personality was so striking that there must be many readers of THE LANCET for whom Sir Humphry Rolleston's words will recall that frail, gaunt man, who with flashing eye and pentrating voice, revealed to them by illustrations, examples, and references—numberless but without a superabundant word—the mysteries of structure, whether in anatomy or its surgical application. "Eyes first, fingers next, ears last!" was, however, Humphry's own warning against acting upon verbal instruction to the neglect of first-hand investigation, and his teaching in the wards ever insisted upon due proportion in observation. Humphry's pupils were devoted to him; and as, under the influence mainly of himself and Sir George Paget, the Medical School at Cambridge grew large, an increasing number of men went out into professional life whose attitude towards their work was influenced at its outset—probably far more than they were themselves aware—by Humphry's rigid accuracy, his contempt for the superfluous, and his exhaustive industry where essentials were concerned. These men will be grateful to Sir Humphry Rolleston for his note on their master.

EPIDEMIC JAUNDICE.

EPIDEMICS of jaundice have been described since 1745, when Gleghorn recorded its prevalence in Minorca, but until more than a century later Weil published an account of four cases with a definite symptom-complex no clear distinction between catarrhal and epidemic jaundice seems to have been made. Weil's patients suffered from pyrexia, jaundice, enlargement of liver and spleen, hæmorrhages, and febrile relapses. Not until 1914 was any light thrown upon the ætiology of the condition though earlier observers had reason to suspect pollution of water as a factor. In November, 1914, however, two Japanese workers, Inada and Ido, isolated a highly motile spirochæte, some 7 to 14 μ long, from a patient suffering from the Japanese form of Weil's disease, which has since been known as spirochætosis icterohæmorrhagica. Noguchi in 1917 pointed out that the organism was characterised by exceedingly fine spirals throughout its length and suggested for it the genetic name of leptospira. It was recognised among German, French, and British soldiers on the Western front, the diagnosis being confirmed by inoculation of the patient's blood into guinea-pigs and the demonstration in the animal tissues of the spirochæte. Since the end of the war epidemics and sporadic cases have been reported from many countries. One of these epidemics—that occurring in East Lothian in 1923 among coal-miners—has been studied in detail by Dr. George Buchanan under a grant from the Medical Research Council; his findings, published to-day,[1] are illustrated by beautiful plates and by microphotographs which vary in their quality. He discusses the clinical history, pathology, and morbid anatomy of the condition, as exemplified by 22 cases diagnosed on clinical symptoms and the presence of the spirochæte in the urine and confirmed in two instances by transmission of the disease to animals by inoculation of the urine. Experimental investigations take up nearly a third of the book, the concluding sections being devoted to the spread of the disease, bacteriological diagnosis, immunity and serology, and prophylaxis. The patients were under the care of Prof. G. Lovell Gulland, who diagnosed the condition, the chief clinical features being sudden onset with headache, body pains, gastro-intestinal symptoms, high fever, slight epistaxis, the appearance of jaundice about the fifth day, a fall of temperature at the end of 11 or 12 days, and the finding of the specific spirochæte in the urine. Of the 22 cases 5 were fatal. As to the spread of infection, wild rats and field-mice were incriminated as carriers of the causal organism. On the experimental side a new observation was that of the presence of a relative small-lymphocytosis in experimental animals within the first few days after infection, and the author suggests that this phenomenon might be of value in diagnosis of human cases. Dr. Buchanan believes that the portal of entry in human cases is more likely to be the abraded skin, or the mucous membrane of the nose, or the eye, from contaminated hands, than the intestinal tract. Inquiry into other possible sources of infection revealed leptospiral organisms in fungal slime hanging from the roof of certain coal-mines and in pit and surface water. As to diagnosis, blood examination for the spirochæte proved negative in all cases, as did guinea-pig inoculations with suspected blood, but only three cases were examined by these methods within seven days of the onset of the illness. Urinary examinations and inoculations were more helpful, but even these were uncertain and appearances under dark-ground illumination atypical; nor did serological methods yield definite results. The author holds, however, that in cases of jaundice where clinical signs point to the spirochætal form, where granular spirochætes are found in the urine, the diagnosis of spirochætal jaundice is justified. A specific antiserum was prepared, but too few cases were available to provide evidence as to its efficiency. The chief prophylactic measures recommended are improvement of drainage of infected coal-mines and rat extermination since over a third of the rats examined from the Edinburgh district harbour the organism. Seeing that the bibliography refers to some 200 papers on the subject of this disease, the preparation of this book can have been no light task. Dr. Buchanan has provided, as well as notes of his own patient investigations, a useful index to the literature.

[1] Medical Research Council, Special Report Series No. 113. 1927. H.M. Stationery Office. Pp. 64. 4s.

THE Rockefeller Medical Fellowships for the academic year 1927–28 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1st. These Fellowships are provided from a fund with which the Medical Research Council have been entrusted by the Rockefeller Foundation. Fellowships are awarded by the Council, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery, and are likely to profit by a period of work at a university or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles. A Fellowship will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance. Travelling expenses and some other allowances will be made in addition. Full particulars and forms of application are obtainable from the Secretary of the Medical Research Council at 15, York-buildings, Adelphi, London, W.C. 2.

NAVAL MEDICAL COMPASSIONATE FUND.—At the quarterly meeting of the directors of this Fund, held on April 21st, Surgeon Vice-Admiral Sir Joseph Chambers, Medical Director-General of the Navy, in the chair, the sum of £210 was distributed among the several applicants.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCXXII.

THE TREATMENT OF BREAST CANCER.

IN spite of the prevailing medical and lay pessimism about the results of operation for cancer, a pessimism which is founded upon out-of-date experience, the outlook in breast cancer is a very hopeful one, always provided that the disease is detected early and dealt with promptly. The treatment of breast cancer is a difficult enterprise, not to be entered upon lightly, nor without due study of the pathology of the disease. The primary growth is near the surface and is apparently much easier to deal with than, for instance, a cancer of the cervix uteri. But whereas the uterus has a simple and well-defined lymphatic drainage, the breast has multiple and complicated connexions with the lymphatic system which make the surgeon's problem difficult. The first local spread of the carcinoma through the breast is facilitated by the particularly rich network of intramammary lymphatics. It takes place, not by the slow process of infiltration but by the more rapid method of permeation—the growth of plugs of cancer cells along the lymphatic vessels of the breast. Some authors, with little pathological knowledge, still speak of permeation as a hypothesis. It is necessary to state that its occurrence and frequency have been established beyond doubt or question by repeated observation. In correspondence with the high development of the intramammary lymphatic system the breast possesses numerous and free communications with the rest of the lymphatic system. As a result the disease is able to pass early and easily to parts beyond the breast. Many of the mammary lymphatics run straight back into that part of the fascial lymphatic plexus which lies upon the great pectoral muscle. This is the largest single lymphatic plexus in the body, and gives the disease access ultimately to the whole of the parietal tissues, if time be allowed for permeation to spread. Hence the wide dissemination of skin nodules seen in some late cases of breast cancer.

Another route of dissemination, and one which has attracted undue attention because it is patent to clinical observation, is the embolic invasion of the axillary glands of the same side leading to their early enlargement. It has been shown that if once the axillary glands are attacked the prognosis for the future must be cautious, even after an efficient operation. If the axillary glands are still free from disease the chances appear to be four to one that an operation will rid the patient of her disease. If the axillary glands have been invaded, the chances of prolonged freedom from recurrence are about one in four. This is a most significant fact.

It is, however, very rare for recurrence after operation to occur in the axilla itself, even if the axillary glands are in an advanced stage of disease, if the axilla has been properly cleared by a practised surgeon. Clearly, therefore, invasion of the axillary glands is not in itself the explanation of the blight which falls upon the patient's prospects when axillary infection occurs. Some other serious event has occurred, an event of which axillary gland invasion is the mere accompaniment and index.

Parasternal Invasion of the Thorax.

This event is an invasion, simultaneous with the axillary gland invasion, of the glands on the mesial side of the breast, those, namely, of the internal mammary chain lying behind the costal cartilages just outside the border of the sternum. These glands lie beyond the range of operation and their condition cannot be determined by any clinical method. Unsuspected early invasion of these glands, only manifesting itself after a period which is usually about three years, but which may be as long as 14, is now the most frequent cause of failure after a well-planned operation for breast cancer. The method of meeting this danger will be discussed later. The evidence upon which this conclusion is based is a study of the recurrences after a scientifically planned operation. Local and axillary recurrences are reduced almost to zero, and more than half the recurrences are found either as nodules at the inner ends of the upper intercostal spaces, or show themselves in the supraclavicular triangle, the glands of which are connected with the internal mammary chain.

Epigastric Invasion of the Abdomen.

The lower and inner margin of the breast reaches to within an inch of the ensiform cartilage, a region in which the body cavity is ill-defended against the insidious attack of permeation. At the tip of the ensiform the only layer which intervenes between the permeated fascial lymphatic plexus and the subserous fat is the linea alba, and this layer is penetrated by lymphatic vessels. Fortunately, by removing the dangerous portion of the anterior layer of the rectus sheath it is possible to guard against invasion by this route and in recent years abdominal recurrence has become relatively rare.

Method of Operation

Two stages are traceable in the evolution of the operation for breast cancer: (*a*) the empirical stage in which the surgeon was guided by a clinical study of previous results; (*b*) the rational stage in which he is guided by knowledge of the mode of spread of the disease. The final and best product of the first stage was the operation of Halstead. The work of Stiles, and subsequent English work on dissemination, has shown radical defects in the original Halstead method, and it may be said that the modern operation for breast cancer is largely a British product. Its aim is to remove intact in a sheath of healthy tissue the primary growth, along with the surrounding permeated area of the lymphatic system and the embolically invaded glands. For such an operation the name amputation of the breast is a misnomer. The operation must be accurately centred on the primary growth and will therefore differ in each case with the situation of the primary growth in the breast. Operative details are here out of place, but it must always be remembered that the disease spreads centrifugally and roughly in a circle from its point of origin, and that the primary plane of spread is the fascial lymphatic plexus, not the skin. Removal of a maximal area, 10 in. or 12 in. in diameter, of the deep fascia is perhaps the most important and difficult part of the operation. Failure in this respect and unnecessary ablation of skin appear to be the defects of the original Halstead method.

Many technical variations are possible in the operation. Some operators prefer to dissect the axilla before removing the breast, believing that thus bleeding is minimised. Personally I prefer first to define and dissect up, along with the breast, the large circle of deep fascia in which the growing edge of the disease lies. After the axillary dissection this circle cannot be defined with such precision.

Diathermy in Breast Surgery.

I have been much impressed of late with the advantages of the diathermic knife over the scalpel in breast surgery. The whole operation except at the apex of the axilla can be performed as rapidly, and with less bleeding and shock, by diathermy. The risk of implantation is done away with. The peripheral edge of deep fascia does not need actual removal provided only that the diathermy knife passes along its plane so as to destroy the permeated lymphatics. This is an important simplification of the operation. The wound may be closed after diathermy just as after a cutting operation and healing is usually satisfactory and painless.

Routine Prophylactic Use of Radium at the Operation.—For the last six years I have made it a rule at the

termination of the radical breast operation to take precautions against possible or probable parasternal invasion of the thorax by burying radium tubes for 24 hours along the line of the internal mammary glands, placing a tube also in contact with the lowest of the supraclavicular glands at the lower and inner angle of the posterior triangle. In my private cases this policy has justified itself by a diminution of 10 per cent. in the recurrence rate. I believe that no operation for breast cancer can in future be regarded as adequate which does not take steps to deal with the danger of parasternal invasion.

Lead Treatment is recommended by Blair Bell as a routine supplement to operation, but some years must elapse before a judgment of its value can be formed. The method has some striking successes to its credit, but it is necessarily attended by a certain risk.

Post-operative Treatment.—A post-operative course of X rays, sufficient merely to stimulate the normal tissues while depressing the vitality of any surviving cancer cells, seems to be a reasonable precaution, but on no account should large doses of high voltage X rays be employed. The "old-fashioned" type of X ray treatment appears to give the best results.

Treatment of Recurrences.

With the advent of radium, and increased knowledge how to use it, the prospect in many cases of recurrence, formerly untreatable, has become a hopeful one. This applies especially to recurrence in the supraclavicular triangle, which if detected early can now be treated by excision of glands combined with the use of radium, or by buried radium alone. Such cases may have no further recurrence for ten years or longer.

The same thing is true of recurrence in the sternum, a very painful and common, and formerly quite untreatable, mode of recurrence. Buried radium tubes used on the encirclement principle will frequently suppress the sternal trouble.[1] Of course, in such cases the disease has often spread to the intrathoracic glands, and after a period of activity and freedom from pain, lasting perhaps several years, thoracic metastases terminate existence in a quick and merciful way. Much longer periods of freedom and health may, however, be secured. I have at present under my care in hospital a patient who had a sternal recurrence six years ago. This was suppressed by buried radium. The patient would have passed from observation had it not been for the recent development of secondary carcinoma of the cervical vertebræ. The sternal disease has not recurred.

If treated early on these lines sternal recurrences can mostly be held in check for a considerable period, and exceptionally a permanent cure of the disease after the failure of a radical operation may be attainable. Anyhow, relief of pain and the prevention or cure of external ulceration can generally be counted upon.

For cases of widespread dissemination, where operation and radium are both useless, X rays may be tried, but lead treatment appears to provide a more hopeful alternative.

Prognosis in Breast Cancer.

Breast cancer may be fatal in three months or only after 40 years. In the most acute forms, with "inflammatory" manifestations, prognosis is easy. In the more chronic forms it is impossible until near the end. The disease may creep about in the tortuous recesses of the parietal lymphatic plexus for years without even giving rise to a subcutaneous nodule. Ultimately, at some point or other, permeation penetrates the defences of the body cavity, attacks the bones, or reaches the cranial cavity. When once evidence of visceral disease has declared itself it is rare for life to be prolonged for more than a year, and a definite forecast of the future can be given.

W. SAMPSON HANDLEY, M.S. Lond., F.R.C.S. Eng.,
Surgeon to the Middlesex Hospital.

[1] The Encirclement Method of Using Buried Radium Tubes. By W. Sampson Handley, Brit. Jour. of Radiology, November, 1925.

Special Articles.

QUEEN CHARLOTTE'S HOSPITAL.

AN APPEAL.

THE urgent need for increasing hospital accommodation for midwifery, and for improving the training of doctors and midwives is reflected in the decision which has been come to by the board of management of Queen Charlotte's Hospital to add considerably to the beds of the institution and to develop the training in accordance with the science of to-day. The following appeal has been sent to the press, signed by the members of the honorary staff.

The Appeal.

The public has not generally realised that, though there have been considerable increases in hospital accommodation for general medical and surgical diseases, there has been little real increase for many years in the facilities for the care and treatment of women during the critical times of pregnancy, labour, and the lying-in. As a result there has been a lack of cases required for the teaching and practical training of medical students in midwifery, a deficiency which does not exist to anything like the same extent in other parts of the medical curriculum. It would not be difficult to show that this long-standing lack of hospital facilities for the teaching of obstetrics is largely responsible for the present high and undiminishing rate of maternal mortality and morbidity in this country.

The reasons for this lack of hospital accommodation are:—

1. The maternity charities have not pressed large appeals for funds, and have therefore figured less in the public eye than other special and general hospitals.

2. The public, through lack of education on these matters, do not regard the processes of child-bearing as potentially dangerous or as requiring medical attention, except in cases of emergency.

3. The science of obstetrics has been erroneously regarded as a minor branch of medicine, whereas it is in fact of equal, if not greater, importance than medicine and surgery, because every doctor must be ready for the emergencies of midwifery, and must be capable of dealing with them single-handed. Hospital facilities for teaching obstetrics have not been considered indispensable, and expansion in this department has not kept pace with that of other departments.

The results of the neglect by the public and the profession of obstetrical practice are:—

1. Inability to provide sufficient in-patient accommodation for the large number of women who require expert assistance in labour, especially those pregnant for the first time.

2. Totally inadequate provision for the diseases of pregnancy. The available beds are all required for women in labour and the lying-in, making it very difficult to admit those needing treatment, rest, and nursing during pregnancy.

The antenatal care of pregnant women has been demonstrated to be one of the most valuable of all forms of preventive medicine. It must be considered as the most important modern development of obstetrics, and one of its chief activities. Failure to provide facilities for antenatal treatment is one of the most conspicuous pieces of evidence that maternity hospitals are not keeping pace with the movement, and experience emphasises more and more strongly the vital need of preventive methods.

3. Almost no provision of beds for puerperal fever. This is still the chief single cause of death in childbirth, and in 1925 accounted for 1110 fatal cases. It has scarcely diminished during the last 50 years. The maternity hospitals and the general hospitals cannot admit cases of puerperal sepsis, a disease which demands above all things efficient treatment and good hospital nursing.

Apart from the Poor-law infirmaries and some M.A.B. hospitals, it is almost impossible to obtain hospital accommodation for a patient suffering from puerperal sepsis anywhere in London. While all other forms of

acute fever, such as the epidemic fevers, can be admitted to special fever hospitals under the care of experts in these diseases, it is remarkable and discreditable that no existing hospital is available for the treatment of this, which is one of the most fatal forms of fever. Of this disease there were 2396 cases notified in 1925. Perhaps in no other disease is inexpert treatment likely to be fraught with so much disaster.

4. Inadequate facilities for teaching obstetrics to medical students.

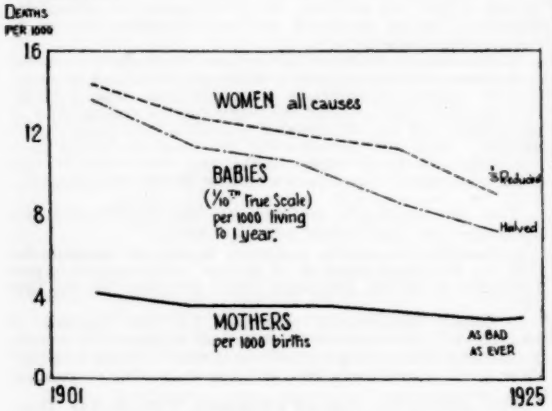
It is not realised by the public how inadequate is the preparation of the student for the practice of midwifery. Out of two years clinical training for qualification only five months are allowed for learning the whole of clinical obstetrics and gynæcology—a branch of medicine above all others which he will be called upon to practise single-handed, ready for all its urgent possibilities.

5. The continued high rate of maternal mortality and the larger amount of ill-health which may result from childbirth in this country.

As an economic factor the latter, largely hidden from the notice of the public, is of great national importance. This legacy of ill-health, disability, and therefore inefficiency of the mother, seriously affects her capacity for the duties of a housewife and for training a young family of children. The results of this are self-evident. More than one-third of all out-patients in a gynæcological hospital are suffering from the results of obstetrical injuries and infections.

The committee of management and medical staff of Queen Charlotte's Hospital are impressed by these facts and have decided that there must be considerable expansion in the hospital accommodation, teaching, and research.

An important feature of the new building will be the provision of about 25 beds, contained in an isolation flat, for the reception, treatment, and investigation of puerperal sepsis. There will also be some beds set aside for the treatment of antenatal conditions.



A significant graph of death-rates per 1000 living, some interesting figures, and a table of maternal mortality are given.

Table of Maternal Mortality.

Year.	Death of one mother to—	No. of deaths per 1000 births.	Year.	Death of one mother to—	No. of deaths per 1000 births.
1897–1906	228 births	4·39	1915	254 births	3·94
1907	261 „	3·83	1916	259 „	3·87
1908	280 „	3·57	1917	273 „	3·66
1909	271 „	3·70	1918	282 „	3·55
1910	281 „	3·56	1919	243 „	4·12
1911	272 „	3·67	1920	243 „	4·12
1912	265 „	3·78	1921	270 „	3·70
1913	270 „	3·71	1922	263 „	3·80
1914	253 „	3·95			

To show the Inadequacy of the Present Accommodation.

About 4000 women, in- and out-patients, are delivered by Queen Charlotte's Hospital in a year.

In 1926 the hospital was *closed 15 times* to further admissions because it was full.

In 1926 the hospital was *closed on 46 days* to further admissions because all beds were occupied.

Queen Charlotte's Hospital is accordingly appealing for £250,000 to provide buildings which will double the capacity of the hospital, and afford endowment which will enable it to do the work demanded of it unhampered by lack of funds, which cramps the full scientific utility of this institution.

Not only will the hospital itself gain, but it is believed that the wide advertisement and publicity incidental to an appeal and the rebuilding of the oldest and best-known lying-in hospital in London, will be forcible evidence of a forward policy in the world of obstetrics, and that it will have its repercussion on the maternity policy of the whole country.

(Signed) J. BRIGHT BANISTER, M.D., F.R.C.S.
ALECK W. BOURNE, B.C., F.R.C.S.
TREVOR B. DAVIES, M.D., M.R.C.P., F.R.C.S.
T. WATTS EDEN, M.D., F.R.C.P., F.R.C.S.
W. GILLIATT, M.D., M.S., F.R.C.S.
C. S. LANE-ROBERTS, M.S., M.B., F.R.C.S.
LEONARD PHILLIPS, M.S., M.B., B.Sc.Lond., F.R.C.S.
LOUIS CARNAC RIVETT, M.C., F.R.C.S.
THOM. G. STEVENS, M.D., F.R.C.S.
CLIFFORD WHITE, M.D., B.S., F.R.C.P., F.R.C.S.
LESLIE H. WILLIAMS, M.D., M.S., F.R.C.S.

The President of the hospital is Lord Howard de Walden, the Chairman Major Sir Samuel Scott, Bt., the Hon. Treasurer Mr. Anthony de Rothschild. Donations should be sent to the Hon. Treasurer at the offices of the Queen Charlotte's Building Fund, 5, Cosway-street, Marylebone-road, N.W. 1.

DROITWICH SPA.

EXTENSION OF THE BRINE BATHS.

ON April 29th Mr. Neville Chamberlain, M.P., in the presence of a large company of medical men and others interested in spa treatment, opened an extension to the St. Andrew's brine baths at Droitwich. The extension consists of a block of 17 first-class reclining bathrooms with dressing-rooms adjoining, some additional second-class reclining bathrooms, and further accommodation for aeration baths. The new building is so arranged that invalids can be wheeled directly into the corridors of the bathrooms, while those who come on foot have no steps to climb.

The ceremony was preceded by an agreeable luncheon in the grounds of the Worcestershire Brine Baths Hotel at which the Mayor of Droitwich was supported by the three trustees of the Corbett Estate, who control the bathing establishment—Viscount Cobham, Mr. J. W. Willis Bund, C.B.E., and Mr. Chamberlain himself. There were also present Sir William Willcox, Dr. Matthew Ray, Dr. Fortescue Fox, Dr. Percy Roden, ex-mayor, Dr. F. H. Foulds, Dr. Malcolm Campbell, Dr. John Wilkinson, Dr. F .I. Dawson, Dr. C. F. Curtis, Dr. T. Stephenson, editor of the *Prescriber*, a number of practitioners from neighbouring towns, and a representative of THE LANCET.

Prayers were said by the Rev. E. H. Longland, Mr. Chamberlain declared the building open, and the company adjourned to a reception in the Salters' Hall, where Mr. Chamberlain gave an address, not—he was careful to explain—as Minister of Health, but as junior Corbett Trustee. The brine baths of Droitwich were, he said, a great national possession, known to the Romans, mentioned in Domesday Book, the spring of brine, 200 ft. below the surface of the ground, was inexhaustible in quantity, and the strongest in the world. Droitwich was protected from winds by the surrounding hills and the climate was bracing and not too cold. At St. Andrew's baths, which were built on modern lines, full use was made of the properties of the brine—stimulating, anodyne,

and so buoyant as to give complete and even support to the limbs, whose mobility could thus be restored. It was well worth while, said he, to get an attack of rheumatism or lumbago in order to experience the comfort of a bathe in these waters.

The amount of invalidity produced by rheumatism was, Mr. Chamberlain continued, causing concern to the approved societies. Droitwich already catered to some extent for the less well-to-do classes. There were 40 beds at St. John's Hospital with 450 patients a year, half of them insured persons, supported by friendly societies. In the convalescent home at Highfield 75 beds were provided by working people, through the Birmingham Hospital Saturday Fund, without assistance from outside source. The local guardians also arranged to take rheumatic patients from other Poor-law unions. Under the will of the late Mr. Thomas Corbett the whole of the estate would ultimately go in charity. The present extension increased the first-class accommodation, but there was, if he might make a suggestion, one thing lacking. There was hardly any medical literature about Droitwich methods of treatment. The better the article the more it paid to advertise it and an unkind world might not believe that anything at all was being done.

Dr. Roden told the story of the first use of the brine as a therapeutic measure during the cholera epidemic of a century ago, and the gradual elaboration in the use of the baths, which were now nearly perfect.

Sir William Willcox said there was no water in the world with the same properties. The brine was 40 per cent. more dense than the water of the Dead Sea and was highly radio-active. The rheumatic diseases accounted for one-sixth of the whole invalidity of workers and he would like to see the accommodation at Droitwich extended ten-fold. The best advertisement for the place was, he thought, the persuasive influence of the cured patient.

Dr. Ray also returned thanks on behalf of the medical guests.

AUSTRALASIAN MEDICAL CONGRESS.

(FROM OUR OWN CORRESPONDENT.)

THE Second Session of the Australasian Medical Congress was held at Dunedin, New Zealand, from Feb. 3rd to 10th. Dr. L. E. Barnett (Dunedin) presided, and the other principal officers were Dr. W. P. Gowland (hon. general secretary), Dr. A. M. Drennan (hon. associate secretary), and Dr. D. W. Carmalt-Jones (hon. treasurer). There were 425 members present, including 175 Australians and 30 medical women. Dr. Cooper Pattin was the guest of the Congress, representing the British Medical Association.

The first suggestion of a congress of medical men throughout Australia and New Zealand was made in 1886 by Dr. Poulton of Adelaide, and an Intercolonial Medical Congress was held in Adelaide in the following year, to commemorate the Jubilee of Queen Victoria. The first to be held in New Zealand was at Dunedin in 1896, and the Congress met again in New Zealand in 1914, at Auckland. The last of the Intercolonial Congresses was held in Brisbane in 1920, when it was decided to establish the present series under the auspices of the B.M.A. The first Australasian Medical Congress (B.M.A.) was held in Melbourne in 1923 with Mr. (now Sir George) Syme in the chair. Great encouragement was then given to New Zealanders to attend, and hopes were expressed that New Zealand would not break away from the Australian States. After this the invitation to Dunedin in 1927 was readily accepted.

Inaugural and Scientific Meetings.

The inaugural meeting was held on Feb. 3rd, and was opened by the Hon. W. Downie Stewart (Acting Prime Minister), in the unavoidable absence of both the Governor-General and of the Premier, Mr. Coates. The Hon. J. A. Young (Minister of Health) welcomed the visitors, and Sir George Syme, the outgoing President, inducted Dr. Barnett, who then delivered his presidential address. His main topic was that of medical ideals and lay criticism; he welcomed the criticism, but warmly defended the education, discipline, ethical outlook, and practice of the profession. He emphasised the attention paid to preventive medicine in the work of the Congress, and outlined the programme. He concluded with some remarks upon the challenged ethics of members of hospital staffs, and of prospective changes in hospital accommodation and administration in New Zealand. The entire proceedings were concluded within an hour, and after the inaugural meeting the President and Mrs. Barnett held a reception in the adjoining Art Gallery.

The scientific meetings were held on Feb. 4th, 7th, 8th, and 9th in the Medical School. This consists of two buildings, one built in 1916 for the departments of pathology and bacteriology, and one completed just in time for the Congress. The latter building is for the departments of anatomy and physiology which were formerly housed at the University of Otago. The whole Medical School is now situated immediately opposite the Public Hospital, where the clinical instruction of students is carried out. The two buildings turned out to be admirably suited for the purpose of the Congress. A general Congress Museum and a special Public Health Museum were both on exhibition, and clinical demonstrations and surgical operations took place in the hospital daily before the sectional meetings began.

A general plan was adopted for the scientific work. Of the four full days of session one was to be devoted to a subject of New Zealand interest, goitre; one to a subject of Australasian interest, hydatid disease; one to a subject of general interest, diet and the alimentary tract, whilst the remaining day was reserved for presentation of new work. Each section was asked to discuss these topics, in so far as they might be appropriate, before proceeding to other work.

There were 12 sections—namely, those of medicine; surgery; obstetrics and gynæcology; pathology and bacteriology; preventive medicine and tropical hygiene; ophthalmology; otology, rhinology, and laryngology; neurology and psychiatry; pædiatrics; naval and military subjects; orthopædics; and radiology and medical electricity. Combined meetings were frequently held.

Visits and Social Functions.

For sections interested, visits were arranged to the local Mental Hospital at Seacliff and to the Karitane Hospital for Infants; the Naval and Military Section conducted a staff-ride and tactical exercise. A bureau was established by the Government Tourist Department, and visitors were enabled to arrange tours to the various places of interest throughout New Zealand. The general office arrangements were excellent, much of the clerical work being carried out by students. St. Margaret's, the Ladies' College, and Studholme House, the residential quarters of the Home Science School, were made available for the accommodation of visitors. Throughout the Congress the weather was excellent, which is unusual during a consecutive week in Dunedin; no less than four large garden parties were given without any of them being marred by rain. The City Council entertained a party at Waipori Falls, some 30 miles from Dunedin, where the municipal power-house is situated. On the Sunday visits were arranged to Waitati and Warrington, small settlements on the coast some 20 miles to the North, where many of the Dunedin doctors have country cottages.

There was no congress dinner, but an official dinner was held at the Dunedin Club. The President was in the chair, and proposed the toast of the King. The Hon. W. Downie Stewart proposed the British Medical Association, and Dr. Cooper Pattin (England), Dr. Antill Pockley (Australia), and Dr. Stanley Batchelor (President N.Z. Branch) replied. The Mayor of Dunedin, Mr. H. L. Tapley, proposed the

Health Services, and the Hon. J. A. Young (Minister of Health, N.Z.), Sir George Syme (Melbourne), and Dr. Peter Buck (Director of Maori Hygiene) replied. Dr. J. S. Elliott (Wellington, N.Z.) proposed the Visitors, and Dr. George Piness (U.S.A.) and Dr. L. A. Kenny (Melbourne) replied. Sir Charles Statham (Speaker of the House of Representatives) proposed the Australasian Medical Congress, and the President replied.

Six sectional dinners were arranged at the three principal clubs, and there was also a medical women's dinner. A dramatic entertainment was given, and a large amount of private hospitality was shown. The social part of the programme concluded with a most enjoyable party given by the President of the Congress and the President and members of the N.Z. Branch of the B.M.A. at the Savoy Restaurant. There was provision for dancing and for bridge, a roof garden was set up to display New Zealand scenes and vegetation, and a performance was given by a troupe of Maori singers and dancers in native costume.

Maori Navigation.

During the week the popular lecture generally provided was delivered by Dr. Peter Buck (Te Rangi Hiroa), the Director of Maori Hygiene, on the Coming of the Maori. He described the remarkable maritime achievements of the Polynesian race, which operated, not like the Phœnicians along the Mediterranean Coast, nor the Scandinavians about the Baltic Peninsula, but among the widely scattered islands of the Pacific archipelagoes, in an ocean area which measures perhaps 5000 by 7000 miles. Moreover, these feats of seamanship, which include the voyage from Hawaii to New Zealand, across some 60 degrees of latitude, were performed in the Stone Age, for the Polynesians had no metals; they sailed in dug-out canoes, rendered seaworthy by the device of the double canoe which they developed from their original device of the out-rigger. The traditional accounts of their great voyages conducted with immense courage and assisted by only the most primitive methods of finding their position are among the greatest romances of the sea.

The College of Surgeons of Australasia.

During the Congress two important events took place—the inauguration of the College of Surgeons of Australasia, and the establishment of a New Zealand Obstetrical Society.

The first meeting of the Founders of the new College was held on Feb. 5th, when 18 out of 40 Foundation members were present. Sir George Syme presided and described how the idea of the College originated. It was first suggested in a letter from Dr. Barnett, this year's President of the Medical Congress, to the Surgical Section at the Intercolonial Congress in Brisbane in 1920; this led to certain activities among surgeons, but the foundation of a college was declined. In 1924 Dr. Mayo and others from the American College of Surgeons visited Australia and New Zealand, and several surgeons from those Dominions were shortly afterwards admitted to the Fellowship of the American College. The opinion developed among these gentlemen that the principles avowed by this College should be universal, and Sir George Syme, Mr. Hamilton Russell, and Dr. H. B. Devine undertook a canvass in Australia. In 1926 a provisional constitution for a College of Surgeons of Australasia was drawn up, 40 Foundation members were selected, and a provisional committee appointed—not without some adverse criticism. A Council of ten was elected, which had met in Dunedin on the previous day, and appointed as officers: President, Sir George Syme; Vice-Presidents, Sir A. McCormick and Dr. L. E. Barnett; Hon. Sec. and Treasurer, Dr. A. L. Kenny; and as Director-General, Sir George Syme. By-laws and conditions of membership were drawn up, which include scrutiny of a candidate's education, house appointments, assistantships, teaching posts, hospital appointments, specialties, with the period of his practice, the percentage of professional time devoted to surgery or its branches, and membership of medical societies and contributions to literature. A pledge is to be taken by the candidate and evidence must be produced of his surgical judgment and skill and of a high ethical standard. These data will be forwarded to the Credentials Committee of the candidate's State, which will recommend accordingly.

New Zealand Obstetrical Society.

This body has come into existence largely through the activities of Dr. Doris Gordon, of Stratford. It was inaugurated during the Congress, Dr. William Irving, of Christchurch, was elected President, and the offices of hon. secretary and treasurer were undertaken by Dr. W. P. Gordon and Dr. Doris Gordon. Each division of the N.Z. Branch of the B.M.A. is represented on the Executive Committee, and it is anticipated that there will be 200 members. The objects of the society are to raise the standard of obstetrical work and to collect statistics. Forms for registration and ultimate collection have already been issued.

THE COMMON COLD IN THE UNITED STATES.

IT is a standing gibe against the medical profession that they cannot cure a common cold, that curse of our winter months, and it is true that this trivial disability has received little attention from investigators in spite of the amount of misery and off-time for which it is responsible. The United States Public Health Service has recently undertaken an epidemiological study of minor respiratory diseases, and its second progress report [1] is based on the data provided by families of University lecturers and of medical officers in the services and public health service. The records cover a period of 12 consecutive months, and are classified so as to establish a statistical definition for each diagnostic class and to ascertain for each the incidence-rate and the characteristics of its age, sex, and seasonal distribution. The classification was chosen with a view to its use by laymen, and consisted of six groups: cold in the nose or head, bronchitis with cough, influenza, sore-throat, tonsillitis or pharyngitis, hay-fever, and pneumonia. It is obvious that such an arbitrary grouping leaves much room for redundancy and confusion, even when the symptoms are also given by the reporter. The writers doubt, however, whether any simple classification would have eliminated the difficulties altogether; they give a detailed diagnostic classification, showing all the combinations under which cases were reported, and a table of 13 symptoms, every one of which occurred in each of the five "minor" groups. The symptoms thus selected are: inflammation of the eyes, running nose, obstruction of nostrils, cough, expectoration, tightness of chest, sore-throat, sudden onset, chill, fever, aching in body or limbs, headache, and constipation. Those which indicate general constitutional disturbance are, as would be expected, least common in colds, more common in bronchitis, and still more common in cases of sore-throat. No doubt the inclusion of some cases of acute follicular tonsillitis accounts for the apparently high frequency of chill and fever in the last-named group.

Influenza.

The influenza or "grippe" group is interesting as giving an indication of what symptoms are generally held by the physicians of America to constitute a diagnostic basis for this versatile condition. It must be remembered that the majority of the reporters were medical practitioners dealing with cases under continuous observation in their own households. The tables show that influenza is characterised by a

[1] Public Health Reports of the U.S. Public Health Service. Jan. 14th, 1927.

more widespread inflammation of the respiratory tract and a higher frequency of constitutional symptoms. Running and obstruction of the nose, cough and tightness of the chest, and sore-throat naturally occur in a higher percentage in the three groups of cold, bronchitis, and sore-throat respectively, but all the other symptoms were recorded more frequently under the diagnosis of influenza than elsewhere. The authors conclude that as a group the cases classed as "influenza" differ quite definitely and objectively from those classed under the other heads. They compare their own figures with those from the influenza outbreak on Kelly Island,[2] which indicate that the "influenza" cases of this inquiry were more nearly related symptomatically to epidemic influenza than to common colds.

Attack-rate and Sex Incidence.

Studying separately the 775 families (2498 individuals) for whom records are available for the whole year, it is found that the incidence-rate for respiratory disease, apart from hay-fever, is just over 2000 per 1000. For 1500 per 1000 of this "colds" are responsible, while influenzal pneumonia and pneumonia only occur in 4·8 cases per 1000. This incidence-rate in a specially selected group of white people, living under good hygienic conditions in cities, cannot be taken to represent the general incidence throughout the country.

When the sexes are separately considered it is seen that men have rather more respiratory infections than women, except in the sore-throat and hay-fever groups. Women are particularly lucky in respect of influenza and bronchitis, but suffer rather more from hay-fever. The incidence is highest in children under 4 and lowest over 55, declining steadily from its high level in the 25–35 age-group. Adolescents between 15 and 25 suffer least of all the young people. It is interesting to find that each clinical group shows a distinctive age distribution. The incidence of colds diminishes with advancing age, while "sore-throat" shows two peaks, one in childhood and one in middle life. The peak of bronchitis morbidity falls between 5 and 10, and its incidence shows the increase again in old age that would be expected from the mortality statistics.

Seasonal Incidence.

For all ages the highest incidence (153·3 per 1000) was recorded for the latter half of January, after which all the conditions gradually declined until the end of November with an intermediate peak in July and early August and another during September. Similar curves were shown in the reports from college students published in the first pamphlet of this series, although their absolute incidence-rate was much higher than among the doctors' families. Both groups came from all parts of the country. No surprise will be felt at the time of highest incidence, but the autumn peak and subsequent decline in early winter is less generally recognised, and longer observations than these will be necessary before the events of 1924 can be established as usual. The hay-fever cases accounted, of course, for the midsummer peak, and the other groups when separately analysed showed peaks corresponding with those of the total curve. Nevertheless, the influenza cases had a distribution quite distinct from that of the colds, the maximum (11 per 1000) being in November and early December, whereas colds maintained a fairly even level (between 5 and 7 per 1000) from September to March. Bronchitis and sore-throat were more irregularly distributed than the others, and there was a striking parallelism between bronchitis and influenza throughout the year.

It would be interesting to have similar figures from this country for comparison. It seems that we cannot blame our peculiar climate for our respiratory distresses, since figures from all over the United States show an incidence in which Northern State runs roughly parallel with Southern, and all are comparable with our own experience here.

[2] Public Health Reports, July 22nd, 1922.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS.

THE Annual Congress of the Society took place on April 28th, 29th, and 30th, in the hall of the Medical Institution, Liverpool, Sir JOHN HERBERT PARSONS, F.R.S., the President, in the chair. On the first morning of the Congress the members of the Society were officially welcomed to the city by the Lord Mayor of Liverpool, Sir F. C. BOWRING, who also entertained them to luncheon on the same day.

Mr. E. TREACHER COLLINS read a paper on

Metaplasia of the Tissues of the Eyeball.

Metaplasia he defined as the production of specialised tissues from cells which normally produced tissue of other orders, owing to an alteration in environment, and not necessarily, or even primarily, to altered function. He divided the metaplasias met with in ocular tissues into embryological, pathological, neoplastic, and biological. As examples of the embryological, he cited the formation of a new lens from the termination of the secondary optic vesicle in larval newts, after destruction or displacement of the normal lens; the production of a lens from an ectoderm which did not normally produce it when either the optic vesicle or the skin overlying it was transplanted in embryo frogs; and in man the substitution of skin for conjunctiva when the eyelids in their development failed to close over the eye. Further examples were the formation, as a congenital abnormality, of bone in the subepithelial tissue of the conjunctiva, the formation of cartilage in place of fibrous tissue in the human sclerotic, and the substitution of retinal tissue for neuroglia in the optic nerve. As examples of pathological metaplasia, Mr. Collins mentioned the formation of bone in the choroid, the substitution of fibrous tissue for the endothelium lining Descemet's membrane, the substitution of stratified horny epithelium for secreting epithelium in cases of xerosis of the conjunctiva, the substitution of yellow elastic tissue for white fibrous tissue in pinguiculæ of the ocular conjunctiva, the substitution of vascular areolar tissue for Bowman's membrane and the anterior layers of the substantia propria of the cornea in cases of pterygium, and the formation of fibrous tissue from epithelial cells lining the lens capsule. In connexion with neoplastic metaplasia, he referred to the formation of spindle-shaped cells in growths primarily endothelial in character, and to the various forms of tissue of mesoblastic origin met with in connexion with tumours of the lacrymal gland and orbit. Under the heading of biological metaplasia he included differences in the constitution of the sclerotic in different species of animals; in some it was composed entirely of fibrous tissue, and in others it contained plates of cartilage or bone. In the choroid the subcapillary fibrillar net in certain animals was, he said, composed of a thin layer of fibres and branching cells, and in others of laminated cellular or laminated fibrous tissue, constituting the tapetum lucidum. The muscular tissue of the iris was composed in some animals of unstriated muscle fibres, in others of striated.

The PRESIDENT said he would not regard pterygium as a metaplasia in the narrow sense in which pathologists generally used that term.

Mr. R. AFFLECK GREEVES read a paper on

Operation for Partial Contraction of Socket.

The essential part of the operation, he said, consisted in the removal of fat and fibrous tissue. Where this was not done, he had not found that suturing had a permanent effect. He did not take away any conjunctiva. Any hæmorrhage which occurred was not difficult to control, nor did he find that the sutures cut out afterwards.

The paper was discussed by Mr. THOMSON HENDERSON (who stated that he had performed a similar operation ten years ago), Sir ARNOLD LAWSON, Mr. GEORGE MAXTED, Mr. J. GRAY CLEGG, and the PRESIDENT.

Dr. GEORGE YOUNG (Colchester) read a paper entitled Practical Keratometry, which was discussed by several members.

Dr. P. STIBBE demonstrated specimens illustrating the comparative anatomy of the nictitating membrane.

Thursday afternoon was devoted to a discussion on

Nystagmus (other than Miners').

Mr. BERNARD CHAVASSE said that there were several pathways along which the subject could be approached. Nystagmus could be regarded either as a movement, a disease, a symptom, an adaptation, a habit, or as a problem in neurology. These views represented a natural series in a progressive order of research, culminating in a study of the nervous mechanisms as constituting the heart of the problem. True nystagmus—i.e., that which was present when the eyes were looking straight-forwards—might increase in certain directions of the gaze, and so assume the primary characteristic of a pseudo-nystagmus. He suggested that the terms "with field central," "with field peripheral," "with field upwards," &c., should be used to replace the old distinction between nystagmus and pseudo-nystagmus. If the nystagmus was jerking, but with a widespread field, and was uninfluenced by occlusion, a more widespread affection was probable. If the movements were dissociated in the two eyes, it was likely that a comparatively peripheral lesion was present. If it was associated, the physician would suspect a lesion of higher or more remote centres, influencing the intact neuromuscular end-organ as a whole. Any bilaterally acting semi-superable obstacle to acute vision, whether actually existing or by the induction of a habit, might produce a smooth bilateral nystagmus, with its widespread or universal field. Mr. Chavasse discussed at some length, with the aid of diagrams, nystagmus as a neurological phenomenon.

Dr. HUGH JONES exhibited a model which had been devised for demonstrating the positions of the semicircular canals in relation to other structures in various postures, and the movements of the otoliths and the consequent pressure exerted by them. He demonstrated the absence of nystagmus in a man who, following double acute labyrinthitis which he refused to have treated, was rotated rapidly ten times in the revolving chair and then suddenly stopped; both labyrinths were entirely inactive. In all vestibular tests, said Dr. Jones, the absence of reaction was at least as important as the presence of reaction.

Dr. GORDON HOLMES dealt with the neurological aspect. He said the field of vision was dependent on vestibular components which compensated movements of the head and body, on visual components which compensated movements of the eyes *plus* voluntary components which adjusted the eyes, and on stimuli of sight in the field of vision. All these must be taken into account in any discussion on nystagmus. The neurologist was chiefly interested in the central mechanisms normally concerned in the adjustment of the eyes, and to him the vestibular component was the important one. He proceeded to detail the parts of the central nervous system from which nystagmus might arise. It depended on lesions of those paths and centres which were limited to the hind-brain and intimately connected with the vestibular apparatus. These he dealt with in detail. He dissented wholly from the view put forward in a recent monograph that nystagmus could be regarded as a tremor of the eyes; it was, he said, a definite coördinative act. It could occur even when the muscles were palsied, or indeed completely paralysed. He had described a case of complete external rectus palsy on the right side, associated with a cerebellar lesion, in which nystagmus was regular and symmetrical in the two eyes. This must be, at least in part, because there was a reciprocal innervation of the antagonistic muscles—i.e., the movement was largely the result of relaxation of the internal rectus of the right eye. Though, usually, nystagmus was designated according to the direction of the rapid phase, the slow phase was the essential feature. In many conditions there was a terminal fixation nystagmus—that is, there were a few jerks of the eyes when the patient first fixed in any position but that of primary rest. It occurred, for instance, in asthenic states, as during convalescence from an acute illness, and in intoxications, especially chronic alcoholic intoxications. He thought this was the form of nystagmus occasionally found in alcoholic neuritis, though a definite lesion of the nerve could not be excluded. It might also be the result of a defective fixation reflex, such as occurred in amblyopia. He asked whether nystagmus ever resulted from a primary lesion of the cortex or of the fore-brain as such. He had examined thousands of cases of gunshot wound of this region, and had never seen nystagmus of any form resulting from such wounds unless the brain was also extensively infected. He believed that in no condition did nystagmus of the type he had referred to result from a lesion of the cortex, or even from a lesion of any part of the fore-brain.

Mr. SYDNEY SCOTT discussed the subject from the otological point of view, remarking at the outset that 30 years ago Dr. Hughlings Jackson had described a case of labyrinthine nystagmus. Most otologists had accepted nomenclature concerning nystagmus which was purely conventional, and possibly it might clash with that adopted by ophthalmic surgeons and by neurologists. Otologists' observations were made in people with normal vision, and in considering labyrinthine nystagmus he would exclude cases of central nervous disease, disseminated sclerosis, Friedreich's ataxy, and similar conditions. It was assumed that nystagmus could be set up in the labyrinth as the result of irritation, and by a caloric stimulus. When it was evoked by such stimuli it must be assumed there was no spontaneous nystagmus in the particular person, as the means of producing it were all excessive stimuli. When testing for this phenomenon it was important to get the patient to look at a small object held not less than 18 inches from the eyes, the head being kept quite still and the eyes following the moving object as it was brought to the extremity of the binocular fields. Nystagmus evoked with the eyes beyond that limit was disregarded in otological clinics, as it was present in 60 per cent. of normal people when that range was exceeded. Sometimes he was asked, in particular cases, whether the nystagmus was the cause of the vertigo, or vice versa. The otologist regarded both as due to a common cause; neither was dependent on the other. But nystagmus was not associated with vertigo when it was not of labyrinthine origin. When using the caloric test it was very important to have the patient's head fixed in a slightly forward position in relation to the trunk. Apart from cerebellar disease, there were certain conditions in which labyrinthine disturbance occurred for a short time. In acute otitis media a nystagmus was sometimes met with which must be distinguished from that which followed destruction of the labyrinth. When the phenomenon was due to otitis media it would disappear when the tympanum was drained, and there was no immediate risk of extension to the labyrinth or to the meninges. If there was a negative response to the caloric test, however, the labyrinth should immediately be opened. Nystagmus was also present in chronic fistula.

(To be concluded.)

WESTMINSTER OPHTHALMIC HOSPITAL.—The annual report of this hospital records the unusual experience of a reduction in the number of patients treated, in-patients having fallen from 919 to 863, and out-patients from 14,905 to 14,046. The committee attribute these reductions to the general strike in May last. Casualties, however, increased from 2007 in 1925 to 2285.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Permanent Care of Feeble-minded.

THE Royal Institution at Larbert has launched an appeal for £70,000 to enable them to develop, to its full powers, the estate acquired for the purpose of colony-care of the feeble-minded. Sir John Gilmour, Secretary of State for Scotland, opened the meeting held by the Lord Provost in the Glasgow City Chambers, and gave a direct and stirring exposition of the general problem and of the special work of the institution. He lent the full weight of his official and personal views to the new development of "permanent care," explaining that this does not mean obligatory confinement, but simply the making of accommodation available for life-care in cases where the patient's guardians seek it. He said that his grandfather had supported the institution from its beginning over 60 years ago, that his father had continued that support, and that he himself had done the same and meant to go on doing it, so convinced was he of the need for this type of accommodation and of the value of the particular scheme. As Sir John Gilmour is controlling Minister of the General Board of Control, this expression of attitude has exceptional importance. A comprehensive and elegant speech from Sir Donald MacAlister, the Principal of the University, further brought out the points of the appeal from both the medical and the public points of view.

A short time ago the Scottish Council of Women Citizens Associations handed to the Larbert Institution the handsome sum of £12,000 on condition that the institution would develop a colony for permanent care. The agitation that ended in this sum of money began over four years ago, and the Women Citizens succeeded in rousing the authorities of Scotland to a consciousness of their duty in this field. The present appeal will reap where the Women Citizens have sown, and there is little doubt that the £70,000 will ultimately be secured.

Radiological Facilities at Edinburgh Royal Infirmary.

At the monthly meeting of the Edinburgh Insurance Committee a letter was read from the clerk and treasurer of the infirmary stating that it had been decided to extend facilities for the examination or treatment by the radiologist of patients who are unable to pay the usual private fees, and for treatment by apparatus and appliances not otherwise available in the city or district—on the footing that the patients would give an appropriate donation to help to defray the expense incurred. The committee expressed their great appreciation of the facilities thus placed at the disposal of the community by the infirmary authorities, and each practitioner on the committee's list will be communicated with. This is an excellent example of how such expensively public-provided installations can be used to extend the powers of the general practitioner.

Change of Doctor.

The Coatbridge Insurance Committee some time ago passed the following resolution: "That the Committee is of opinion that a material cause of the increase on sickness benefit claims is due to the present system, which allows change of doctor at any time, and that the former system should be reverted to and change of doctor only be permitted half-yearly." The Edinburgh Committee discussed the point at great length once more and, by a large majority, agreed to recommend that the present system be retained. Probably Coatbridge means the *fear* of change of doctor rather than the actual change. The known administrative facts seem to point that way.

NEW BETHLEM ROYAL HOSPITAL.—The Governors will shortly start upon the building of the new hospital on the Monks Orchard Estate at Shirley, near Croydon, and tenders are being invited for the first portion. It is expected that the buildings will be completed in less than three years.

Public Health Services.

SCHOOL MEDICAL SERVICE.

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Gillingham ..	7,579	6,827	2,307	2,169	16·0
Bootle	12,071	10,852	3,728	12,690	26·0
Bedfordshire.	—†	—†	5,182	1,451	18·85

* Excluding uncleanliness and dental defects. † Not given.

Gillingham.

Dr. W. A. Muir gives a concise statistical summary of the medical work during 1926, of which the net cost to the ratepayers was approximately ¾*d.* in the £. "The washing and sanitary accommodation inside some of the schools," he writes, "does not reach a high standard of cleanliness, quite apart from the question of some of it being out of date from a hygienic standpoint . . . . The influence of precept on the young child is very little, that of example is immeasurable." Uncleanliness of this sort should not be tolerated by any education authority as it cuts at the roots of the whole medical work; in Gillingham it is associated with a lack of facilities for treating exceptional children in open-air and special classes, and an absence of orthopædic arrangements found in many comparable areas. The high percentage of parents (90 per cent. with entrants) attending the medical examination shows the interest taken by parents in the welfare of their children. The medical work is of a satisfactory nature all round; defects of the nose, throat, ears, and eyes are well treated. Here, as elsewhere, there is a disinclination to take full advantage of the dental treatment offered; and only 33 per cent. of those requiring dental treatment obtained it. Measles and mumps epidemics during 1926 entailed much extra home visiting and laid an additional strain on the nurses, of whom there are only two. This may account for the rise in the numbers of children found verminous from 16·3 in 1925 to 17·3 per cent. in 1926.

Bootle.

Dr. F. T. H. Wood opens his nineteenth annual report with a satisfactory answer to the question as to whether the medical service has evidence of any substantial improvement in the physique and hygiene of the school population. Personal cleanliness and freedom from parasites show a remarkable change, largely due to the activities of the school medical service. Physique, as estimated by measurement of height and weight, shows an advance in places, while there is an obvious diminution in the severe degree of rickety deformities formerly seen. Defects of the teeth, eyes, nose, and throat call for more attention to the health of the pre-school child; only by sustained effort from the earliest ages can the maximum improvement in national health be maintained. Referring to Dr. H. C. C. Mann's report to the Medical Research Council on the feeding of school-boys, Dr. Wood believes it would be to the advantage of the public health of the country if—concurrently with the improvement now being aimed at in the cleanliness and safety of the milk-supply—a large increase in its consumption above the half-pint daily average could be obtained. In view of the continued unfavourable economic conditions the increase in ill-nourished children from 6·1 per cent. in 1925 to 7·6 per cent. in 1926 is not surprising. Using the "forced whisper" test in the intermediate and leaving groups some defect in hearing was recorded in 12·5 per cent. boys and 10·0 per cent. girls, in the great majority the defect being of moderate degree. The presence of these minor degrees

of deafness is often overlooked, although they are of considerable moment to educational progress and success in the labour market. No school department was closed on account of infectious disease during the year. Of the total number of days lost through sickness impetigo was responsible for the largest amount. Of the 82 ascertained educable feeble-minded children in the borough 21 attend special classes, 28 are in ordinary elementary classes, and 31 are not attending any school or institution. Supervision of this last group is obtained by home visits from the nurses, supplemented by individual re-examination by the school medical officer.

Bedfordshire.

In this report Dr. R. T. Herdman shows how difficulties can be met by goodwill and efficient organisation. For the sake of economy and better education, older children are being taken away from the small village schools to larger ones some distance away. Transport difficulties are real, but are being got over, as is the difficulty of the midday meal which is being provided at the school. With good management and by making full use of school gardens, themselves agencies of great educational value, it is found possible to keep the actual cost of the food that has to be bought to 1*s.* a week per child. These school dinners have other advantages in the training of children, and may help to maintain the higher standard of physique and nutrition shown to exist in the year under review. The risk of chill from sitting in wet boots is obviated by the use of slippers, supplied by the parents or made in the school at a small charge for material—another instance of practical education. It is suggested that these elder children could be medically examined at their local rural schools, so as to give their parents opportunity of direct speech with the examining doctor, the teachers at the senior schools being notified in writing of any defects discovered. There are as yet no special schools in the county maintained by the authority; the obstacles of providing them in such scattered districts are manifest, but it is to be hoped they may be overcome by organisation similar to that which has produced central schools.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 23RD, 1927.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 358 (last week 348); scarlet fever, 1202; diphtheria, 761; enteric fever, 47; pneumonia, 1061; puerperal fever, 38; puerperal pyrexia, 98; cerebro-spinal fever, 8; acute poliomyelitis, 5; acute polioencephalitis, 1; encephalitis lethargica, 30; continued fever, 1; dysentery, 8; ophthalmia neonatorum, 120. No case of cholera, plague, or typhus fever was notified during the week.

The cases of small-pox were notified from the counties of Derby 18 (10 of these from the county borough), Durham 149, Kent 1 (Gravesend), Northumberland 17, Nottingham 4, Yorks North Riding 7, West Riding 72, Monmouth 90 (of these 57 from Abersychan and 18 from Blaenavon). The small outbreak at Hendon (Middlesex) is still unnoticed in the official return; there have been 8 cases with 3 deaths reported in the daily press.

Deaths.—In the aggregate of great towns including London there was no death from small-pox, 1 (0) from enteric fever, 81 (4) from measles, 4 (1) from scarlet fever, 46 (18) from whooping-cough, 27 (7) from diphtheria, 53 (14) from diarrhœa and enteritis under two years, and 82 (17) from influenza. The figures in parentheses are those for London itself.

The fatal case of small-pox from Sheffield included in the return for March 26th occurred in a prematurely-born infant three weeks old, whose mother had contracted the disease. The child weighed only a little over 4 lb. at birth and was so weakly that it was deemed inadvisable to vaccinate it. Dr. F. E. Wynne, who sends us this information, considers it unlikely that the child would have survived in any case. No information is yet available as to the type of small-pox in the three fatal cases reported from Hendon.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

PATENT MEDICINE DUTY.

ON Tuesday, April 26th, the House of Commons considered the Budget Resolutions on Report.

On the resolution for the continuance of the additional excise duty on patent medicines,

Lieut.-Commander KENWORTHY said he believed the actual amount produced by the duty was something like £300,000 a year. This was a very small part of the total revenue, but it meant a good deal to very poor people who had to buy these patent medicines because they could not afford, in many cases, to get any other kind of doctoring. He did not know whether the patent medicines did them any harm or good; that might be arguable, but the fact was these people took them. Well-to-do people who bought these medicines did not feel the tax at all, but poor women and others felt every halfpenny when they were living on a few shillings a week and were beginning to ail in their advancing years. It would be a humanitarian act for the House to remove this tax on the sick and ailing. He never heard of any doctor who was particularly keen on this tax, though he dare say some, for purely selfish reasons, might object to people buying patent medicines instead of consulting a doctor.

Mr. HARRIS said that it must be assumed that these medicines were of some good for health, for if not the Ministry of Health, would, they must assume, interfere and prohibit their use and sale. If they were good for curing ills, as they were advertised to be, surely it was a wrong thing to subject them to a duty dating back as far as 1783, which had never been defined or codified or made clear to the public, and which, from the point of view of revenue, or of incidence, or of finance, or of cost of collection, was thoroughly unsound in principle, and quite against the canons of sound finance.

Mr. R. MCNEILL (Financial Secretary of the Treasury) said that the revenue derived from this duty was pretty considerable. They estimated the income from it this year at £1,340,000, which was not to be despised in times like these. On that ground alone he would have to ask the House to maintain this duty. The reason why the duty was being made permanent was that as a matter of fact since it was doubled in 1915, the working of the duty had shown that this particular commodity could very well bear the tax which, had been put upon it for ten years without in any way decreasing consumption, and at the same time allowing for a very large increase of revenue. Most people would agree that if a tax was put too high on any particular commodity of this sort, the tax showed itself in a decrease of revenue. In point of fact, since the rate was doubled in 1915 the actual yield from this duty had gone up nearly four times. This showed that this was a legitimate source of revenue which it was now proposed to make permanent. This tax was originally, and was still in principle, a tax on quack medicines. No real medicine recommended by a qualified physician and coming under a certain definition and supplied as part of the ordinary British Pharmacopœia came under the duty at all. The tax applied to patent medicines which were or purported to be of a proprietary or secret character.

Major CRAWFURD: The right hon. gentleman said this was originally meant to be a tax on quack medicines. He is surely not going to apply that phrase to all patent medicines. The tax may be a good or bad one, but all proprietary medicines are not necessarily quack medicines.

Mr. MCNEILL: That of course depends on what is your definition of quack, but that was the original intention.

Mr. HARDIE said that poor people who could not afford to go to Harley-street specialists or to get any specialised advice often went without food to buy some positive remedy which they had seen advertised in a newspaper and which they hoped would do good to some member of their family. The number of people who could not get specialised medical advice and treatment was increasing, and such people took these patent medicines as the next best thing. He urged that the Government should give some guarantee of these medicines.

Mr. THURTLE said that it was the poor who had so little money to spend on medical advice and attention that were most in need of it. They lived in very crowded housing conditions, and consumed inferior food. He protested against the absence of any representative of the Ministry of Health during a debate which concerned the health of the great mass of the people.

Mr. MOSLEY said that if these patent medicines were bad they should be stopped by law, but if there was any good in them they should not be subject to taxation. But he would not object to this tax on possibly indifferent medicines if the Government was returning the proceeds of the taxation for the improvememt of the general science of medicine and

health. That, however, was not the case, and while over £1,000,000 a year was raised by this taxation, the Government were **not** spending more, he believed, than £200,000 on medical research.

On a division the resolution was agreed to by 251 votes to 116.

ACCIDENTS IN MINES.

On Wednesday, April 27th, Mr. GEORGE HIRST moved :—

"That this House deplores the heavy loss of life and the large number of non-fatal accidents in mines, and regrets the failure of the Government to give effect to repeated pledges that every possible step would be taken without delay, whether by legislation or otherwise, to secure the fullest protection to those engaged in this dangerous industry."

He said that one would imagine when motions of this description had been introduced from time to time in that House and when statements had been made bringing the facts before the notice of the Government that the latter would do all in their power to introduce regulations to minimise accidents in mines. But nothing had been done so far as they could discover to prevent a recurrence of the serious accidents which had taken place, and were still taking place. This was a very important question, and ought to be dealt with very seriously. He had made a comparison between the number of accidents which occurred during the time when the men were working seven hours a day and the number of accidents under the eight hours' day, and he found that the latter figures were tremendously larger than the former. Working out the averages of fatal accidents during the eight hours' system and the seven hours' system over a number of years they found that the figures showed 260 more deaths per year under the eight hour day than under the seven hour day. The Secretary for Mines had stated in answer to a question that there had been 306 deaths, and 1214 persons had been seriously injured through accidents in coal mines, in the first three months of 1926 under the seven hours' rule. The corresponding figures for the first three months of 1927 were 324 killed and 1291 seriously injured. The purpose of that debate was to draw the attention of the Mines Department to the fact that something ought to be done to prevent the terrible accidents. He made several suggestions in 1925 during a previous debate on this subject as to steps which he thought the Mines Department ought to take. The proposal to abolish the Mines Department was absolutely ridiculous. He hoped that the Chancellor of the Exchequer and the Government would leave that Department alone. Instead of doing away with it they ought to add to it more people who had direct knowledge of the working of mines so that they might minimise the number of these accidents to a great extent. One of the suggestions he had made was that more shafts should be sunk. At the present time mines were being worked where men had to walk from two to three miles from the shaft bottom to the working face. The sinking of new shafts would have a tendency to reduce accidents. It would improve the ventilation and improve the health of the miners. It would also reduce the risk of explosion and also falls from the roof and sides by stopping the accumulation of gas.

Mr. GRUNDY, in seconding the motion, said that the Mines Department had all the accumulated expert knowledge in regard to this subject, and the evidence which had been taken at various inquiries into accidents that had occurred from time to time, yet since 1911 there had been no legislation aimed at giving additional safety to the men who worked under these dangerous conditions. There were 3000 pits but he wished to ask whether there were sufficient inspectors to inspect them? What was being done with regard to nystagmus, about which there were startling figures? A committee of the Medical Research Council reported in 1922–23 that the chief cause of the disease was insufficient illumination, and that the cases severe enough to cause disablement could by degrees be entirely prevented by improving the standard of lighting. From 1905 to 1912 there were 1760 cases of nystagmus; in 1913, 4550; in 1920, 7028; in 1921, 6717; in 1922, 9155; in 1923, 11,142; in 1924, 10,906; and in 1925, 11,334. If it was possible by any means, no matter at what cost, these cases of nystagmus ought to be decreased. There was only one class of employment that had a greater fatality-rate than mining. In 1922 fatalities in mines amounted to ·95; in shipping it was 1·33. In 1923 the figure was 1·06, against 1·14 for shipping; and in 1924 it was 1·05, against 1·39 for shipping. The non-fatal accidents in mines in 1922 was 160,056. In shipping they were 18,066. In 1923 non-fatal accidents in mines were 177,041; in shipping they were 1791. Accidents in mines were eight times as many as in docks, and five times the average of factories, docks, quarries, constructional works, and railways taken together.

Mr. R. HUDSON moved to leave out from the word "mines" to the end of the motion, and to add instead the words :—"but recognises that steady progress is being made towards the attainment of safer conditions by means of regulations, research, inquiry, and inspection, as a result of which the safety of mining in the country compares on the whole very favourably with that in other countries."

He said he did not think it was right that party capital should be made out of a subject which affected the lives and happiness of so many of their fellow men engaged in one of the main industries of the country. When they read the annual reports of the inspectors of mines they must be impressed with the fact that they harped year after year on one subject—namely, the avoidability of many of these accidents. But in spite of that they had the same thing cropping up again and again. After looking at the more depressing side of this subject had they no ground for hope? If they compared the conditions in this country with those abroad were we better off, or could we learn any lessons from foreign countries? He had looked up in one of the reports the figures of the mean annual death-rate for two periods of ten years—namely, 1903 to 1912 and 1913 to 1922. In Great Britain the percentage was 1·3 in the first period and 1·2 in the second period; in the United States the percentage was 5·1 in the first period and 4·3 in the second period; in Belgium 1·0 and 1·2; in the Netherlands 1·8 and 1·7; and in Germany 2·1 and 2·8. These figures applied to the same period. The only country which had a lower death-rate than ours in this respect was France, where it was 1·0. If they examined the British figures they would find that there had been a sensible improvement. There were fewer people killed in 1925 than in 1924, and if they took the rate per 100,000 man shifts worked between 1922 and 1925 they would find that it had fallen from 66·3 to 63·9. He agreed that they ought to inquire whether everything possible had been done to minimise accidents, but never during the past ten years had so much been actually done to deal with the really basic problems of industry as they affected the health efficiency and the comfort of the individual worker. The Institute of Industrial Psychology, the Medical Research Council, the Industrial Fatigue Research Board, the Safety in Mines Research Board, and other organisations too numerous to mention, were carrying on an intensive campaign. An immense amount of information was being gathered from other industries which was applicable to coal mines. These investigations had shown the importance of ventilation, and the subject was being intensively studied by a committee of the Institution of Mining Engineers, and when the engineering problems had been solved, they might anticipate a corresponding diminution in the accident-rate. The importance to the country as a whole of these discoveries needed no emphasising when they considered the extent to which our shallower seams were being worked out. There were some interesting results showing the human factor as the cause of accidents, from which it appeared that in any particular group of men there were certain individuals whose liability to accidents was greater than others. If means could be devised of discovering these people at an early age and setting them to jobs involving less danger the accident-rate would decrease, not only in mines but in other dangerous industries as well. It was the daily accidents which they wanted to avoid, even more than the big spectacular accidents which struck public opinion from time to time. He had seen it estimated that compensation for accidents imposed a cost of something like 3*d*. per ton of coal raised in this country. A great deal had been done by way of inculcating "safety first," but there again education was sadly needed, and the need for it was strikingly illustrated in the report of the Inspector for the Northern Division. Speaking of 1925 he said that of the deaths caused by explosives 67 per cent. were due to clear breaches of the regulations; 61 of the non-fatal cases were due to the same cause; while 30 per cent. of the remainder could have been avoided by the exercise of due caution. The seven years' figures were worse still. Ninety per cent. of the fatal accidents and 80 per cent. of the non-fatal accidents were due, he said, to breaches of the Explosives in Coal Mines Orders. That was a situation appalling to contemplate. In another passage the inspector deplored the lack of any real organised coöperation in safety matters between owners and workmen. There was, he said, a tendency on the part of the workers to expect all action for protection to come from the official side. It had been said that no action had been taken by way of legislation to assist in the prevention of accidents, but he thought that the passing of the Mining Industry Act of last year and the increase in the amount of money available for the welfare fund could not fail by increasing the general physique and well-being of the men engaged in the industry to have its results in diminishing the number of accidents.

Mr. CLARRY, in seconding the amendment, said that the work of securing greater safety in mines was being carried on to the best of the ability of those engaged in it. There was no section of the community which would not do everything in its power to render the mines safer in working. Science and human ingenuity were hard at work all the time with that end in view.

After further discussion,

Colonel LANE FOX (Secretary for Mines), said that while every hon. Member was most anxious to do his utmost to try to reduce the rate of accidents in mines when that was coupled with the assertion in the motion that the Government had failed to carry out their pledges it was obvious that the Government could not advise their supporters to allow the motion to pass, and that an amendment must be moved to put the matter on a better basis. The amendment, he thought, expressed the feeling of the vast majority of the House. Legislation alone was no use in this matter, and in his belief they had ample legislation. They could do far more by regulation, and the Mines Department had been carrying out in the most thorough way by inquiry, research, regulation, and inspection the duties which had been laid upon it. The suggestion had been made that the proposed reorganisation of Ministries might involve decreased efficiency in safeguarding the health and safety of miners. He could quite safely say on behalf of the Government that that would be far too high a price to pay for any economy. In carrying out any economy the House might rest assured that the full interests of the health and safety of those who worked in the mines would be considered, and no rearrangement would be allowed to interfere with that most necessary duty. He did not want to say that because this country was in a far better position than any other country, except perhaps France, in this matter that they ought to be satisfied; but at the same time let them not paint the picture too black. If they went through the periods of the year they would find that the accident and death-rate was slowly but steadily decreasing. They had better try to face facts instead of juggling with figures, which were very dangerous. They had set up a Water Dangers Committee which had been travelling round the country and collecting the fullest information from all sources. He hoped that that Committee would shortly report. They could not legislate in a hurry, and perhaps make a mistake without investigating. The Safety in Mines Research Board, which was financed by the Welfare Fund, but was controlled and worked hand in hand with the Mines Department and under its supervision, had a number of daughter committees. These committees were dealing with the support of workings underground, with ventilation, explosives, and so on, as well as with wire ropes and spontaneous combustion. A new experimental research station had been set up at Buxton which he hoped would be a very great improvement on the former station. He hoped that the new station would be officially opened in June, and that its work would be of enormous value to the mining industry. At the present time they were already carrying out coal-dust experiments under various conditions, fire damp explosions, and testing mining explosives. In addition, there was a considerable amount of laboratory work being carried on. The main laboratory work would continue to be carried on in Sheffield. The questions of spontaneous combustion and the use of electricity were not being lost sight of.

On a division the amendment was carried by 201 votes to 114.

EXPERIMENTS ON ANIMALS.

On Thursday, April 28th, Lieut.-Colonel FREMANTLE presented a petition signed by leading members of the medical profession concerned in medical education, including 1497 members of university staffs, medical schools, and teaching hospitals, praying the House not to support any Bill to place further restrictions on experimental work on dogs or other animals, and asking for such an alteration in the existing law as would permit, under proper provisions for the prevention of pain, and efficient inspection and control, the use for purposes of research of some of the numerous stray and unowned dogs.

FRIDAY, APRIL 29TH.

MARRIED WOMEN (EMPLOYMENT) BILL.

Sir ROBERT NEWMAN, in moving the second reading of the Married Women (Employment) Bill, said that it proposed to confer on married women the right to work. It did not in any way interfere with the legitimate responsibilities and discretion of local authorities. It did not compel any public authority to employ a woman because she was married. The Sex Disqualification (Removal) Act, 1919, laid down that "a person shall not be disqualified by sex or marriage . . . from being appointed to or holding any civil or judicial office or post." Somehow or other that Act did not seem to have had much effect. A woman who was old enough to marry was old enough to decide whether she should continue in her occupation. There were hundreds of thousands of women who were earning their own living, and he believed that half a million of them were married. Therefore it was rather late in the day to bring forward the argument that the place of a woman was in her home. There was no justification to refuse the appointment of a married woman because she was married or to dismiss her for the same reason. People who objected to the employment of married women as teachers or in the public service forgot that in other walks of life married women were playing a most prominent part. He thought he was not wrong in saying that some of the leading lady doctors were married. One found them in Harley-street and other places. If a woman could hold a high position in a highly scientific profession like medicine, surely it was rather ridiculous to say that she was not qualified to carry out duties in other directions. It was rather extraordinary that they should dismiss a school-teacher because she was married, and yet a woman occupied the position of second-in-command of the educational system of the country.

Mr. PETHICK-LAWRENCE, in seconding the motion for the second reading of the Bill, said that what they were really out for in the measure was to secure what they might rightly call the economic charter of the professional married woman. It might be thought that with the growing freedom of women in the country that matters with regard to the employment of married women could be left automatically to right themselves. But that was not the case, because with the growth of that independence there was growing up a deliberate attempt to prevent the married woman from retaining her job. Therefore it was necessary for the House to take the step contemplated in this Bill so as to secure that these repressive tendencies should be brought to an end. Apart from the injury to the woman herself and her husband and family, through the action which they were seeking to get rid of, there was also an injury to the community. If, for instance, a municipality had a regulation that no married woman could have a job either as a teacher or a medical officer that municipality and its ratepayers were to that extent deprived of a choice. Many of these professional positions entailed a great deal of expense in preparing the individual for the work. What an extraordinary waste it was if, because a woman married, the whole value to the community of those years of training was to be thrown away. It might happen that a woman on marriage might not be suited or might be prevented by maternal duties from carrying out efficiently work which before her marriage she was able to do. There was nothing in the Bill which prevented a local authority from dismissing such a woman. But they had examples in the medical and other professions which showed quite clearly that many married women and mothers were capable of carrying out efficiently their work, and work quite as arduous as any which the Bill sought to deal with.

Mr. REMER, in moving the rejection of the Bill, said that they must realise the facts. There were positions in the public service which it would be utterly impossible for a married woman to undertake. There was the possibility of childbirth to be taken into consideration, and that must involve long absence from work, and might probably make it impossible for the woman to continue in her employment. He also appealed for the rejection of the Bill on the ground of economy. If the Bill passed a Government department or municipal authority would either have to pay the woman during the period that she was unable to carry out her work, or if at the time of childbirth she was dismissed there would be much odium on the State or on the municipal authority for carrying out a very distasteful duty. The fewer examples they had of legislation of this kind the better it would be for the House of Commons.

Captain BOURNE, in seconding the motion for rejection, said that presumably the public bodies who objected to employ married women had good reasons for their attitude. One reason was because experience had shown that in normal cases a woman was not as efficient a few years after marriage as she was before. He did not think that anybody would contend that a woman during the period of pregnancy or immediately afterwards—a period which covered many months—was as efficient as she was under normal conditions. Nor was the woman who was looking after a number of small children as efficient as one who was not. The sexes were not equal in all respects, and no legislation would get over that provision of nature.

Sir H. SLESSER said that he objected to interference in contractual relations between employers and employed, but here they were dealing with authorities who were receiving money either from Parliament or out of the local rates. There was a distinction between a public body and a private employer, and he believed that it was the intention of the Legislature in passing previous legislation that men and women should be employed or not solely on the grounds of their value to the State, and it was irrelevant to take into consideration the mere fact that they had or had not been married. This Bill was a progress in the direction of individual liberty, and for that reason he supported it with great enthusiasm.

Viscountess ASTOR said that when she listened to the opponents of the Bill she felt that she knew women who could have twins every year and still be more efficient than some Members of Parliament. She hoped very much that

the Bill would pass, but she was sorry that the Government were going to oppose it. She believed that women had a right to judge whether they ought to work or not.

After further discussion,

Mr. RONALD MCNEILL (Financial Secretary to the Treasury) said that if this Bill were passed it would effect a far-reaching and important change in the administration not only of the departments of the central government of the State, but all the departments of the innumerable local authorities. Whether hon. Members thought that the proposed change would be desirable or undesirable they must recognise that it could only be made on the initiative of the Government of the day. There had not been the slightest indication in the debate that there was any support for the Bill among the great popularly elected bodies of the country. He opposed the Bill first of all in the interests of women themselves. The ultimate tendency of such legislation would be to discourage the employment of women, married or unmarried. This was not a question which ought to be decided on principle. The whole question here was whether or not the Bill would improve or not improve the public service; and, secondly, whether the proposed change would do an injustice to any individuals, either men or women. Inefficiency was a relative term. A person might be very efficient at one moment and quite inefficient at another. That was why he thought there was no real analogy between the public service and other callings, such as medicine and the law. It did not make much difference to the solicitor or the doctor or the actress if they happened to be in a state of health at any given moment which compelled them to retire temporarily from their work. It might be an inconvenience and a loss, but it did not affect gravely or permanently their efficiency in that particular employment. It was a totally different thing in the Civil Service and in the carrying out of the great machinery of government. Obviously women and men alike in the public service must take the ordinary sickness risk. It could not be eliminated, but they tried to get the risk as low as possible by medical examination. What the supporters of this Bill were asking the Government to do was to increase the sickness risk—the risk of discontinuance of service—in the case of women after they were married. It was common medical knowledge that in some cases pregnancy inflicted great loss of health and strength and spirits on a woman, sometimes for many months, while others who were differently constituted would go on until within a few days of confinement without apparently suffering any loss of physical vigour. These facts added enormously to the sickness risk which the Government would have to take with the consequent immense loss over the whole service of efficiency on which the conduct of the service rested. Having regard to all these considerations, he hoped that the House would not be led astray in this matter.

Dr. LITTLE said that the opposition to the Bill seemed to be largely founded on what he thought were fallacious medical propositions. The objection to the employment of women seemed to rest largely on a physiological incident of life among married women. But did men suffer from no sexual disability? He thought that anyone comparing the numbers of absentees in any service, both male and female, would find quite as many males suffer from sexual disability, and absences from this cause were an important set-off to the absences of women as a result of disability arising from sex. The universities of this country had had this question before them, and had solved it for themselves. They had made no distinction whatever between the sexes. He submitted that there was no support for what he called the medical argument. It had not been urged by any medical authority, and it fell to the ground the moment that it was examined.

On a division the Bill was rejected by 84 votes to 63.

PROTECTION OF DOGS BILL.

On April 29th Sir ROBERT GOWER, in moving the second reading of the Dogs Protection Bill, said that it provided that it should be unlawful to perform any experiment of a nature calculated to give pain or disease to any dog for any purpose whatsoever, either with or without anæsthetics, and that no person or place should be licensed for the purpose of performing any such experiments. On three occasions this Bill had secured a second reading in that House, on two occasions without a division, and once with a division when it passed through the Committee subject to an amendment which was suggested by the Government, and when, had it not been for an unfortunate accident, which prevented it securing a third reading, it would undoubtedly have been placed on the Statute Book. The Bill was not brought forward with any desire to obstruct or hamper legitimate surgical or medical research. The general question of the vivisection of animals did not arise in the consideration of this Bill, which applied to one animal only—namely, the dog. Since the Bill was presented to the House a rather keen controversy had been waged in the *Times*, and two eminent medical men, Sir Charles Ballance and Mr. Walter Spencer, inserted in that newspaper a manifesto in opposition to this particular Bill. In reply to that manifesto a letter appeared from Dr. Fielding-Ould, who, he thought, would be admitted by those connected with the medical profession to be one of the most eminent and distinguished members of that profession. After referring to the statement which Sir Charles Ballance and Mr. Spencer had made, Dr. Fielding-Ould said:—

"We cannot find any justification for the continued use of cats and dogs in research. These domestic animals have become, by close association with man, more and more sensitive, and unless vivisectors can give convincing proof of the necessity, then their continued use for experimental purposes amounts to deliberate cruelty, and offends the moral sense of very many thinking people."

He went on to say:—

"The onus of proving the necessity lies with the vivisectors, and at present there is no proof whatever, nor does Sir Charles Ballance attempt it."

He also said, and he (Sir R. Gower) thought that hon. Members who had followed this controversy for years past would agree that such was the fact:—

"It is the reasoned opinion of very many scientific men that dogs and cats may reasonably be exempted from experiment without impeding the progress of scientific research in the least."

The House would observe that in this letter Dr. Fielding-Ould laid down a very definite challenge not only to Sir Charles Ballance and Mr. Spencer but to the medical profession at large. They would imagine that if the case of those who were opposing the Bill were strong they would have accepted the challenge laid down and would have written to the *Times* or to some of their publications providing the proof asked for. It was perfectly true that Sir Charles Ballance and Mr. Spencer considered it necessary to reply to Dr. Fielding-Ould's letter in the *Times*, but in their reply they emphatically disclosed their objection to the Bill. They made no attempt at all effectively to rebut the statements of Dr. Fielding-Ould, but gave as their chief reason of objection to the Bill the following: "The Dogs Protection Bill is the thin end of the wedge, the object being to stop all research by vivisection in this country." Lord Banbury, when introducing a Bill similar to this in the House of Lords, some time ago gave a quotation from a speech made by Sir Lambert Ormsby in April, 1922, as follows:—

"Experiments on dogs might now be discontinued. All that can be found out by physiological experiments for application to human beings has long since been discovered, and repetitions are unnecessary and cruel."

No one could charge those gentlemen whose opinions he had quoted with being fanatics or cranks, or with not having the interests of the human race at heart. He had studied very carefully the literature which had emanated from the Medical Defence Council on this particular question, and he had also carefully read the correspondence which had taken place not only in medical journals but also in the lay press, and it was most significant that except on one occasion no attempt had been made by opponents of this Bill, or by members of the medical profession, to prove that it was necessary in the interests of humanity that vivisection experiments should be made on dogs. The single exception was contained in a pamphlet issued by the Research Defence Society which contained an article by Dr. Starling, the Foulerton Professor of the Royal Society, in which he made this statement:—

"Why is the use of dogs so essential in medical research? No one will dispute that to gain a knowledge of living functions recourse must be had to living animals, and those animals must be such as can be kept in comfort and health within the precincts of a laboratory."

The House would observe that the question of finance entered into the opinion which Dr. Starling had expressed. He went on to say—and this statement was rather an important one—that:—

"The ordinary farm animals are, therefore, excluded by this fact alone, but a more fundamental objection to their use, so far as information to be gained by experiments on them is concerned, arises from the wide differences which exists between the structure, functions and habits of their digestive organs and those of man."

If that contention of Dr. Starling was correct it might perhaps be argued that a very strong case was made out against the Bill, but this opinion of Dr. Starling was in direct opposition to the evidence which was given by one of the greatest medical scientists that this country had ever known—namely, Sir William Osler—before the last Royal Commission on Vivisection, and that evidence was not contradicted by any other medical man or by anyone else. Sir William Osler, in his replies to questions, had said that a pig had got a stomach and intestines much more like those of man. The pig was used in old days, and he supposed that Galen's experiments were largely upon pigs. He had never tried to anæsthetise a pig, but given a pig

under an anæsthetic he agreed that it would be a very useful animal to operate on. The late Sir Frederick Treves[1] said :—

"Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that, when I came to operate upon men, I found that I was much hampered by my new experience, that I had everything to unlearn, that my experiments have done little but unfit me to deal with the human intestine."

The Royal Commission did not report in favour of the exemption of dogs, but that exemption was only lost by a very small majority. When the question was before the Commission Sir William Osler said : "I think we have all felt that it would be very much better if we could get animals other than the dog to operate on." He quoted with approval the opinion of Dr. Cushing to the effect that

"There is naturally a feeling of regret in the minds of many—of none greater than our own—that animals, particularly dogs, should be subjected to operations, even though the object be a most desirable one and accomplished without the inflicting of pain, and did expense permit we would gladly have used animals with which there is an association of less acute sentiment on the part of all."

In some of the letters which had appeared in the press doubt had been expressed whether under the safeguards which were imposed animals actually suffered pain in consequence of these experiments. He did not think that any member of the medical profession would dispute that in many cases very great suffering was involved to the animal. It was clear from the report of the Commission, and from the evidence given by the Home Office expert, that there was a great deal of pain and suffering in certain cases. He would like to quote the opinion of Dr. George Wilson, medical officer of health for Warwick, and a member of the Royal Commission on Vivisection, and President of the State Medicine Section of the British Medical Association. The statement was from his presidential address to the British Medical Association at Portsmouth in 1898 :—

"I boldly say that there should be some pause in these ruthless lines of experimentation. I have not allied myself to the anti-vivisectionists, but I accuse my profession of misleading the public as to the cruelties and horrors which are perpetrated on animal life. When it is stated that the actual pain involved in these experiments is commonly of the most trivial description, there is a suppression of the truth, of the most palpable kind, which can only be accounted for by ignorance of the actual facts. I admit that in the mere operation of injecting a virus, whether cultivated or not, there may be little or no pain, but the cruelty does not lie in the operation itself, which is permitted to be performed without anæsthetics, but in the after-effects. Whether so-called toxins are injected under the skin into the peritoneum, into the cranium, under the dura mater, into the pleural cavity, into the veins, eyes or other organs—and all these methods are ruthlessly practised—there is long-drawn-out agony. The animal so innocently operated on may have to live days, weeks or months, with no anæsthetic to assuage its sufferings, and nothing but death to relieve."

He would also quote the opinion of Dr. Fielding-Ould, who was a medical man upon whose word the greatest authority and weight could be placed. He said :—

"Consider a case of 'brain surgery' in which after removal of part of the brain the animal is allowed to regain consciousness and subsequently to drag out weeks of a painful convalescence. It is apposite also to mention cases in bacteriological work, to which no reference is made by Sir Charles Ballance. Often it happens that in the interests of research an emulsion of a virulent germ is injected into the abdominal cavity of a living animal (without an anæsthetic) and the creature is left to develop the disease with all the agonising accompaniments of peritonitis."

That letter was written by Dr. Fielding-Ould on March 30th of this year. He had also a large number of extracts from THE LANCET, the *British Medical Journal*, and other journals, giving particulars of operations and experiments which had been performed during the last year or so, and which showed beyond any question that these unfortunate animals which were experimented upon did suffer great agony and misery. He appreciated the fact that it was too late in the afternoon for him to get a second reading of the Bill that day, but he hoped that it might be possible to get the Bill passed some time during the session.

Lieut.-Colonel MOORE, in seconding the motion for the second reading, said he must disassociate himself from any views expressed by antivivisectionists. He was not an antivivisectionist. He was ready to accept the view that vivisection was necessary for the protection and extension of human life, but what he was not satisfied about was that dogs as such were necessary for these experiments, and that the vivisection of dogs would actually result in the saving or extension of human life. It was as a dog lover that he was addressing the House, and in taking this action he was confident that he was representing a growing body of opinion outside the House which regarded with horror the vivisection of dogs, and looked upon it as a blot upon the highly developed civilisation of the twentieth century. The chief argument used by vivisectionists in favour of their practice was that experiments on animals, including dogs, were justified and necessary in order to ascertain the probable effects of such experiments on human beings, and so save suffering and prolong human life. Were that contention proved to his satisfaction he would not have another word to say on behalf of this Bill. But had it been proved? Prof. Lawson Tait, Fellow of the Royal College of Surgeons, said : "The fact is that diseases of animals are so different from those of men that the conclusions of vivisectionists are absolutely useless."

Lieut.-Colonel FREMANTLE : In what year did he say that?

Lieut.-Colonel MOORE : I cannot say off-hand.

Lieut.-Colonel FREMANTLE : Twenty-five years ago.

Lieut.-Colonel MOORE said that he submitted that a learned gentleman's statement did not alter with the passage of time, more especially in the medical profession. Doctors, he assumed, had certain permanent professional beliefs. In confirmation of that statement he would take a few of the diseases for the cure of which vivisection experiments were being carried on. In the last 20 years the death-rate from cancer had increased by 46 per cent. In the same period the death-rate from diabetes had increased by 55 per cent., and the death-rate from thyroid diseases had increased by 85 per cent. These were diseases which vivisection was intended to relieve and cure. Let him take, on the other hand, diseases the cure of which largely depended on open air and more hygienic conditions of life. They found the enteric death-rate in 20 years had gone down by 89 per cent., measles 60 per cent., and scarlet fever 77 per cent. These were startling figures. Though he was not prepared to accept these figures as conclusive proof that vivisection was useless, he suggested that they called for very serious consideration, and at any rate provided an adequate case for the exemption of dogs from vivisection.

Lieut.-Colonel FREMANTLE moved the rejection of the Bill. He said that it was impossible to state the case against the measure in the quarter of a minute which remained, but he wished to say that they could meet the arguments put forward that day and would be glad to do so at any other time. If any antivivisectionists or people in favour of this Bill wished to have a meeting in that House or anywhere else, they would be glad to meet them on even terms, and they would beat them every time.

Sir RICHARD LUCE rose to speak, but it being 4 o'clock the debate stood adjourned.

[1] Brit. Med. Jour., Nov. 5th, 1898.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 27TH.

Passage Concessions to Indian Medical Officers.

Mr. PETHICK-LAWRENCE asked the Under Secretary of State for India whether a decision had now been reached as to granting passage concessions to Indian officers who entered the Indian Medical Service by competitive examination in London.—Earl WINTERTON replied : My noble friend has decided that all officers of the Indian Medical Service, including those of Asiatic domicile, shall be required before promotion to the rank of major to complete the senior officers' course at the Royal Army Medical College, Millbank. Attendance at this course will count as duty and carry with it free passages to and from the United Kingdom. Officers of the Indian Medical Service of Asiatic domicile will immediately after completing this course be regarded as eligible for a period of study leave, during which they will retain a lien on their free return passage to India. Those officers of Asiatic domicile now on service, who by reason of their age are disqualified from attending the senior officers' course, will be eligible once during their service for a free passage to England and back when proceeding on study leave. The Government of India have, however, not found it possible to give full effect to the scheme in the present financial year.

THURSDAY, APRIL 28TH.

Pensioners and Final Awards.

Sir WALTER DE FRECE asked the Minister of Pensions the number of applications for increase of pensions by men suffering from admitted war disabilities who did not appeal against their respective final awards within the statutory period, but whose condition had now become admittedly worse; and how many such men were actually under treatment, although their pensions could not be increased.—Major TRYON replied : I have no record of the number of cases of the kind referred to, but according to all the information in my possession they are comparatively few. With regard to the latter part of the question, I would remind my hon. friend that in every case where, following a course of medical treatment and observation, it is found that a serious and permanent error was made in the final award, a further grant is made under special sanction.

Fatal Accidents in Factories.

Mr. HERBERT WILLIAMS asked the Home Secretary the average fatal accident-rate per 1000 employed reported under the Factory and Workshops Acts during the four years 1922–25 and, for comparison, the corresponding figure for the four years 1910–13.—Sir WILLIAM JOYNSON-HICKS replied: I am afraid I cannot give my hon. friend precise figures, as there are no complete statistics available of the number of persons employed within the scope of the Factory and Workshop Acts in the years mentioned. On the best estimate I can make the fatal accident-rate per 1000 employed was 0·18 per annum for the period 1910–13, and 0·14 per annum for 1922–25. The former figure relates to Great Britain and Ireland, the latter to Great Britain only.

White Lead Paint Regulations and Ships.

Mr. RHYS DAVIES asked the Home Secretary whether he had received from the Shipbuilding Federation protests against the regulations governing the use of white lead in paint; what were the objections of the Federation to the regulations; and what steps, if any, he proposed to take to see that the regulations should apply equally to the painting of buildings and ships.—Sir WILLIAM JOYNSON-HICKS replied: The Shipbuilding Employers' Federation have objected to the application of the draft regulations to the painting of buildings in shipbuilding establishments on the ground that the persons employed in such painting are only occasionally so employed. The painting of ships is not in question, as the Act of last session only applies to the painting of buildings.

Secretaries to School Medical Officers.

Dr. VERNON DAVIES asked the President of the Board of Education if the appointment of the 15 secretaries to the school medical officers by the Lancashire education authority had led to any increase in the number of children examined at each session compared with the number examined previous to these appointments; and, if so, what was the increase.—Lord EUSTACE PERCY replied: If my hon. friend will refer to the previous replies which I have given on this subject, he will see that the primary object of the arrangement adopted by the Lancashire authority is not to enable a larger number of children to be examined by the medical officers at each session, but to expedite the necessary clerical work connected with the school medical service. I understand, however, that, in fact, the number of children examined per session has increased by about 33 per cent. during the last few years, and that, in the opinion of the authority, if the clerical work were undertaken by the school nurses, the number of children dealt with by the existing medical staff would be reduced.

Imported Machine-skimmed Milk.

Lieut.-Colonel ACLAND-TROYTE asked the Minister of Health whether he was aware that machine-skimmed condensed milk which was unfit for consumption by infants was being imported in increasing quantities; and whether, if investigations showed that this milk was injurious to invalids and healthy people, he would take steps to prohibit its importation.—Mr. CHAMBERLAIN replied: I am aware of the increase in the imports of machine-skimmed condensed milk. The absence of milk-fat renders this article unsuitable for infants, but I am advised that its constituents, so far from being injurious, are of high nutritional value for ordinary food purposes, and I see no sufficient reason for prohibiting its importation.

MONDAY, MAY 2ND.

Specialist Officers in India.

Mr. WARDLAW-MILNE asked the Under Secretary of State for India if he was now in a position to publish the full list of miscellaneous and specialist officers in India whose posts it had been decided to treat as superior.—Earl WINTERTON replied: Certain names have been added to the list already sent to my hon. friend, and it is expected that a further number will be added. A premature decision to close the list would result in injustice to officers whose claims have not been disposed of. As all the officers whose posts it is decided to treat as superior will be so informed by the Government under which they serve, I do not consider publication in the ordinary sense is required.

Navy, Army, and Air Force Insurance Fund.

Sir BERTRAM FALLE asked the Minister of Health if he would consider an amendment to the National Health Insurance Act, 1924, so that the period of six months, or in particular cases 12 months, for readmission to the Navy, Army, and Air Force Insurance Fund from date of discharge from His Majesty's Forces, should not include any period when a would-be applicant was suffering from mental ill-health, seeing that in a recent case a man regarded himself as perfectly healthy, mentally and physically, yet before another six months had expired he was certified as a lunatic, and his child was not eligible for benefit.—Mr. CHAMBERLAIN replied: The time within which a man discharged from service in the forces may apply for readmission to the Navy, Army, and Air Force Insurance Fund is governed by regulations under Section 59 (1) (*e*) of the National Health Insurance Act, 1924, and legislation would not be required to make the change suggested. Although I am not at present satisfied that any hardship arises under the regulation in its present form, I will carefully consider whether any modification in the direction suggested by my hon. friend is desirable.

Blind Persons in London and Provincial Cities.

Mr. HAYES asked the Minister of Health whether he could give the number of blind persons whose ages were between 50 and 70 years registered in the cities of Liverpool, Manchester, Birmingham, and London respectively.—Mr. CHAMBERLAIN replied: The latest figures at present available are those at March 31st, 1925, and are as follows: Liverpool, 476; Manchester, 402; Birmingham, 375; and London, 1346.

The Services.

THE HEALTH OF THE NAVY IN 1924.

THE statistical report on the health of the Navy for 1924 has just been issued. The number of men employed was rather less than in 1923. The amount of illness slightly increased, and the number of deaths rose from 184 to 271. Invaliding fell from 1433 to 1272. There were 65 cases of enteric fever on board the *Royal Sovereign*, due to eating lettuce brought on board against orders at Madeira. The figure for pulmonary tuberculosis rose slightly, and there were more invalidings and deaths. The incidence of this disease was again highest among telegraphists; the largest increase of cases was among seamen. There were no cases among the sick berth staff. Venereal diseases greatly decreased; there were 800 fewer primary cases, and 20,000 fewer days of treatment.

BRITISH GARRISON IN HONG-KONG.

The British Red Cross Society is taking steps to form a branch of the society in Hong-Kong for the benefit of the British troops in the colony. A supply of comforts has already been sent; and a substantial sum has been placed to the credit of the Governor of Hong-Kong for the purchase of such additional hospital comforts as may be required. The Army Council have welcomed these efforts on behalf of all ranks of the Garrison, and have expressed their cordial thanks for the prompt and energetic action which the Society has taken.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdrs. H. L. P. Peregrine and J. C. Sinclair to be Surg.-Comdrs.

ROYAL ARMY MEDICAL CORPS.

Capt. R. L. Ritchie to be Maj.

J. W. Malcolm, late R.A.M.C. (Spec. Res.), to be temp. Capt.

ARMY RESERVE OF OFFICERS.

Col. H. W. Grattan, late R.A.M.C., having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

Lt.-Cols. H. S. Anderson and L. F. F. Winslow, having attained the age limit of liability to recall, cease to belong to the Res. of Off.

TERRITORIAL ARMY.

Lt.-Cols. (Bt. Cols.) T. B. Wolstenholme, J. H. Hunter, and J. W. Kemp, from R.A.M.C., T.A., to be Cols.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Capt. C. G. Irwin, from the Active List, to be Capt.

Lt. A. G. Ogilvie, from the Active List, to be Lt.

ROYAL AIR FORCE.

The undermentioned relinquish their temporary commissions on ceasing to be employed: Flight Lt. (hon. Squadron Leader) H. B. Smith and Flight Lt. A. E. Jenkins.

MILITARY NURSING.—It is officially announced that Queen Alexandra's Imperial Military Nursing Service and Queen Alexandra's Military Nursing Service for India have been amalgamated as from Nov. 1st, 1926. The normal tour of duty in India for members of the amalgamated service below the rank of principal matron will be five years.

Correspondence.

"Audi alteram partem."

TESTS FOR DRUNKENNESS.

To the Editor of THE LANCET.

SIR,—Reverting to Sir William Willcox's letter in your issue of April 23rd, I had thought that our discussion at the Medico-Legal Society had disposed of the objection, faintly raised by someone, that there might be legal difficulty in carrying out Dr. Southgate and Dr. Carter's method. But Sir William Willcox now writes in your columns, "there were definite legal objections to the application of the test by the prosecuting authority—for example, the taking of a sample of blood from an accused person who was unwilling might be technically regarded as a legal assault." To take a sample of blood, yes, if it meant making an incision to obtain it; but we were talking about a sample of urine, and the taking of that would not involve a trespass, and it would provide legal evidence. The method proposed by Dr. Southgate and Dr. Carter was, I understand, to have a urinal in the cell, with its waste pipe running outside, from which the sample could be collected.

I am, Sir, yours faithfully,

ERNEST E. WILLIAMS.

Lake-road, Wimbledon, S.W., April 29th, 1927.

THE TOXÆMIA OF ACUTE INTESTINAL OBSTRUCTION.

To the Editor of THE LANCET.

SIR,—It astonishes me that Mr. B. W. Williams in his Hunterian Lecture on the above in your last issue should have omitted all reference to the very careful work performed by McQuarrie and Whipple on the cause of the Toxæmia of Acute Intestinal Obstruction. McQuarrie and Whipple performed experiments which appeared to show that the toxæmia in question is due to the absorption of a toxic proteose from the obstructed gut; and they even injected proteose into the veins of normal dogs and produced all the signs and symptoms of a toxæmia comparable with those found in acute intestinal obstruction. If an individual believes that A is equal to B, to substantiate his hypothesis, besides giving reason to believe that this is so, he must also display the error in the arguments of all those who have shown, or apparently have shown, that A is not equal to B. Mr. Williams believes the toxæmia of acute intestinal obstruction is due to absorption of toxin produced by the multiplication of the *B. welchii* in the obstructed gut; that it is due to the absorption of toxic proteose he does not seem to have considered, and he does not show or state that the toxin in question is in fact a toxic proteose. Moreover, he states his opinion in spite of allowing that "the characteristic toxæmia will develop when there is paralytic ileus, whatever the cause of the peritonitis, whether streptococcal, pneumococcal, or resulting from any organism, when *B. welchii* is not present in the peritoneal infection."

That Mr. Williams should not have referred to my work is less surprising; yet are my unorthodox views supported by argument and scientific inquiry. I showed, as a reviewer of my work allowed, that McQuarrie and Whipple had not sufficiently considered the effect of the persistent vomiting, induced either by strangulation of the intestine or by the injection of certain proteoses into the blood stream of normal animals, on the individual. But Mr. Williams refers not at all to the reaction of the patient to an obstruction of his intestine. He imputes the "fine fatty degeneration in the liver and heart muscle" to the *B. welchii* toxin; he has not considered whether such changes may be produced by the persistent vomiting. Yet there is reason to believe that persistent vomiting, even in the absence of intestinal obstruction, can cause such changes; indeed, in the pernicious vomiting of pregnancy we have such a picture. The effect of the persistent and frequently recurring pain, the restlessness, sleeplessness, the straining and the persistent vomiting of all patients suffering from intestinal obstruction is absent from his drawing; he imputes all the changes to the absorption of a toxin. In spite of that he has not shown the presence of the toxin in the blood in these cases; he has not even shown that such is absorbed, and even admits that "the organism may be abundant in the large intestine without any clinical toxæmia"; and he allows that in acute obstruction improvement usually follows rapidly on successful operative relief. But if the toxins are in the blood and working their wicked will, operative interference should be far less effective than it is.

That organisms, even pathogenic ones, are present in the obstructed gut we may well believe. The offensiveness of the vomit is sufficient evidence. That a filtrate of such vomit injected into mice should kill them, and that mice protected from such toxin by an antitoxin should survive, we may well believe. But this does not show that such toxins are absorbed from the obstructed gut and give rise to all the toxæmic phenomena and the collapse of intestinal obstruction. The multiplication of these organisms in the obstructed gut is readily explained by the limitation of blood flow through, and the diminished activity of, the mucosa in the affected part. So far from their being absorbed, there is reason to believe that such gut contents are not absorbed, or not in normal amount or at normal rate. Mr. Williams seems to admit as much; referring to the sudden collapse which may occur unexpectedly after successful operation, he says this may be due to "the sudden flooding of the circulation with a lethal dose of toxin by the very act of relief of the strangulated intestine . . . through restoration of the circulation to the damaged area permitting very rapid absorption of toxin, or possibly by rapid absorption of toxin by the normal mucous membrane distal to the obstruction after its relief." The katabolic processes in the body, which in intestinal obstruction are occurring at speed, are forgotten or not considered; that man is an animal subject to fatigue—even in acute intestinal obstruction—is a phase of the question completely ignored.—I am, Sir, yours faithfully,

R. H. PARAMORE, F.R.C.S. Eng.

Rugby, May 2nd, 1927.

GLUCOSONE: A POSSIBLE SUBSTITUTE FOR INSULIN.

To the Editor of THE LANCET.

Sir,—A paper[1] communicated to the Royal Society recently by Dr. Hynd from this department may turn out to be of considerable importance. Dr. Hynd has ascertained that glucosone or aldofructose, one of the oxidation products of glucose or fructose, produces when injected subcutaneously in mice a condition which is very similar to that produced by the injection of insulin. Similar oxidation products of maltose and lactose—i.e., maltosone and lactosone—are inactive, but on hydrolysis become active. Dr. Hynd suggests that glucosone is the intermediate in carbohydrate metabolism which is normally formed, and that some at least of the symptoms produced by insulin are due to the production of glucosone in excess. The symptoms are modified by adrenalin and pituitrin as are those due to insulin.

If Dr. Hynd's views are correct it is possible that glucosone might be used in place of insulin, particularly as it can be taken by mouth. Preparations made commercially were used in Germany by Thannhauser and Jenke, but they were prepared by the hydrogen peroxide method which gives a product

[1] The Action of Glucosone on Normal Animals (Mice) and its Possible Significance in Metabolism. By A. Hynd. Proc. of the Royal Society, B., 1927, ci., 244.

mixed with many other oxidation products of glucose, some of which are toxic. Thannhauser and Jenke treated cases of severe diabetes with the commercial product, and found that it cleared up the urine from sugar and acetone bodies, but its use could not be continued because of gastro-intestinal complications. Pure glucosone, made by Fischer's method, does not appear to give rise to any bad effects beyond those immediately produced from an overdose, but this method of preparation is costly and complicated. Only small quantities of the pure substance have been hitherto available, and for that reason the experiments recorded by Dr. Hynd have been carried out on mice. Rats and rabbits, however, show the same effects on administration of an overdose, and the symptoms are remarkably similar to those which follow an overdose of insulin.

Hitherto there have been many attempts to find a substitute for insulin, but few have been directed to ascertaining what form of carbohydrate other than glycogen results from the action of insulin upon glucose. If it can be established that glucosone is an important intermediate its importance is obvious.

I am, Sir, yours faithfully,

P. T. HERRING.

Physiology Department, The University, St. Andrews, April 27th, 1927.

CREAM IN INFANT FEEDING.

To the Editor of THE LANCET.

SIR,—Dr. R. C. Jewesbury, in the concluding paragraph of his letter, asks for information on the point "whether fat is needed rather for its vitamin content than for its food value," and adds, "until we are better informed surely we must believe that it is of value from both these points of view." All the available evidence goes to show that fats, apart from their high caloric value, have no specific food value, such as carbohydrates, for instance, possess by virtue of their so-called "protein-sparing action," and that no advantage is derived from a high intake of fat. On the contrary, the experimental work of Colonel R. McCarrison [1] indicates that a high intake of fat may have an unfavourable effect on the function of the thyroid gland, unless it is corrected by a corresponding increased intake of iodine.

I am, Sir, yours faithfully,

W. CRAMER.

Imperial Cancer Research Fund, Queen-square, W.C., May 2nd, 1927.

BROMSULPHALEIN.

To the Editor of THE LANCET.

SIR,—Dr. Rosenthal's surprise at my results was no greater than my own disappointment. He himself explains the reason that great difficulties existed in the manufacture of the dye, and Mr. W. Martindale—the "local chemist"—prepared a substance differing in very slight degree from the original prepared by Dr. E. C. White. As there are, however, grave doubts as to whether this substance behaves in a similar way to White's preparation I am reinvestigating the whole matter with bromsulphalein kindly supplied to me gratuitously by Dr. White and by Messrs. Hynson, Westcott, and Dunning, of Baltimore. If I have been led into erroneous conclusions I shall take the first opportunity of contradicting them, but at the present time I am keeping an open mind upon the subject. In conclusion, I may add that I have been in communication with Dr. White about the chemistry of these dyes, and his letter threw the first doubts upon the dye which I had used.

I am, Sir, yours faithfully,

ERNEST BULMER, M.D., M.R.C.P.

Birmingham, April 15th, 1927.

[1] Brit. Med. Jour., 1924, i., 989.

THE PENALISATION OF THE TUBERCULOUS.

To the Editor of THE LANCET.

SIR,—Dr. Varrier-Jones has misunderstood the purpose of my letter. My meaning would, perhaps, have been clearer if my remarks had been entitled "The Penalisation of the Notified." I do not know anything about the gentleman who was refused a post in a sanatorium because he had been treated for tuberculosis, further than was to be gleaned from "M.O's" letter in your issue of March 19th, but I gathered that he had been advised to be treated for this affection and had made a good recovery.

It does not always follow that when a patient in the early and curable stage of the disease is advised to be treated in a sanatorium that this advice is taken; the patient concerned preferring to take the risk of getting better as best he may, and if this should happen, having avoided notification, or at least publicity, will suffer no disabilities, but will be regarded as an ordinary citizen. To illustrate what I mean, I may say that some years ago my advice was asked as to what had better be done with a young police-constable who was suffering from hæmoptysis; who, by the way, had also tubercle bacilli in his sputum. I replied that he should be sent to the sanatorium at once as no one was justified in risking this man's life because he might lose his job if he admitted that he was suffering from tuberculosis, but I pointed out that in my opinion there was no reason why he should not be reinstated if he made a good recovery; this course was followed and after an uneventful recovery taking five months, he was taken back into the force, having lost his tubercle bacilli, and has been doing duty ever since.

My letter was in no way concerned with the well-known fact that many cases of chronic disease can be kept alive and working for many years if their surroundings are favourable; indeed, there are thousands of chronic cases of tuberculosis carrying on their ordinary avocations, suffering from tuberculosis often in complete ignorance as to the nature of the disease from which they are suffering. A sanatorium should not, however, be concerned with these cases, but should spend its time in preventing the formation of persons chronically ill, but in order that this may happen it is necessary that the public should be well assured that no penalties shall follow when they elect to make a proper effort towards recovery instead of hiding the nature of their illness lest a worse fate befall them. It is obvious that no question of continuing work during treatment will arise in such cases.

I am, Sir, yours faithfully,

April 21st, 1927. ERADICATION.

THE TITLE OF DOCTOR.—By a judgment of Mr. Justice Middleton, osteopaths and manipulative surgeons in the province of Ontario are debarred from using the prefix "doctor" as an occupational designation. Under the Ontario Medical Act the use of the term "doctor" is forbidden to all except registered physicians.

NOTTINGHAM HOSPITAL.—On Saturday last Princess Mary opened the new out-patients' department of Nottingham General Hospital and an extension of the Children's Hospital. The ground floor of the out-patients' wing of the General Hospital includes four blocks of consulting rooms, dressing rooms, and examination rooms. The upper floor consists of a complete nose, ear, and throat hospital with 40 beds, an operating theatre and other adjuncts; the basement contains a fully-equipped department for radiography, ultra-violet ray and therapeutic treatment, and a complete orthopædic department, with a gymnasium. The extension has cost close upon £100,000, of which Mr. W. G. Player has given £50,000. The Children's Hospital has been so much enlarged and improved that it is virtually a new building, connected by a corridor with the original, which is eventually to become a nurses' home. There are 78 beds in six wards, ample provision is made for open-air treatment, and there are playgrounds on the roof. Mr. John Player has given £40,000 towards the cost.

THE IRISH FREE STATE MEDICAL REGISTER BILL.

(FROM OUR OWN CORRESPONDENT.)

THE text of the Free State Medical Register Bill, which was introduced to the Dail by President Cosgrave last week, was published on Monday last. It provides for the confirmation of an agreement made between the British Government, the Government of the Irish Free State, and the Government of Northern Ireland, on the subject of medical registration and for the establishment of a Medical Council and a Medical Register for the Irish Free State.

The agreement, which is signed by Earl Balfour, Mr. McGilligan, and Sir Dawson Bates, on behalf of the respective Governments, provides that the powers and functions of the General Council in regard to Ireland, and the powers formerly vested in certain universities and corporations in Ireland, shall be deemed not to have been affected by the establishment of the Irish Free State or of Northern Ireland. The nomination of members of the General Council by the several universities and corporations in Ireland shall be made as heretofore, as shall the election of a direct representative by registered practitioners in Ireland. The nomination of a member for Ireland, formerly made by His Majesty, shall in future be made by His Majesty on the recommendation of the Government of Northern Ireland. It is further provided that any person who is or shall be registered in the General Register shall be entitled, on payment of a fee prescribed by the Free State Parliament, to be registered in the Free State Register; no fee shall be payable by any person who, being on the General Register at the date of establishment of the Free State Register, applies for registration therein in the prescribed time and manner. Apart from the agreement with Great Britain, the Bill sets out the constitution, powers, and duties of a Medical Council to be established in the Free State. The Council is to consist of nine members—namely, one nominated by the Executive Council; one each by the following bodies: University College, Cork; University College, Galway; University College, Dublin; the University of Dublin; the Apothecaries' Hall; one nominated jointly by the Royal College of Surgeons and the Royal College of Physicians; and two, who shall be registered medical practitioners, elected by the registered medical practitioners resident in the Free State. The Council will have, as its chief duty, to establish and maintain a Medical Register. Persons entitled to be registered on the Register, on its establishment, and without the payment of a fee, will be:—

(*a*) Every person already registered in the General Medical Register and resident in the Free State; and (*b*) every person resident outside the Free State and already registered in the General Medical Register who applies to the Free State Council within one month after the establishment of the Register.

After the establishment of the Register, the following persons, on making the prescribed application and paying the prescribed fee, shall be entitled to be registered in it:—

(*a*) Every person who at the time of application is registered in the General Medical Register, and (*b*) every person who at the time of application possessed one or more of the qualifying diplomas mentioned in the third schedule to the Bill—viz., L.R.C.P.I., L.R.C.S.I., Licentiate of the Apothecaries' Hall, Dublin; M.D., Dublin University; M.B., B.Ch., Dublin University; Licentiate in Medicine and Licentiate in Surgery, Dublin University; M.D. N.U.I.; M.B., B.Ch. N.U.I.

On and after the establishment of the Free State Register no practitioner shall be entitled to recover in any legal proceedings any fees on account of medical or surgical attendance by him unless he was registered in the home Register at the date on which such attendance was given.

Similarly, appointments which are to be held by "qualified medical practitioners" or "registered medical practitioners," will only be tenable in the Free State by persons on the Free State Register.

The Bill gives the Council the same powers as regards education and discipline as are at present possessed by the General Council. Any persons aggrieved, however, by an adverse decision of the Council, will have the right of appeal to the High Court, the judgment of which shall be final, and not subject to appeal to any other Court.

The necessary expenses of the Council for the first year are to be borne by public funds, and subsequently out of the Council's own monies.

Up to the present there has been little time for comment on the Bill. It seems to be clear that there is no interference with the privileges and rights of Irish graduates and licentiates to registration on the General Register, and therefore, on the main point the fears and anxieties of the Irish medical profession at the time when it was announced that a change would be made can now be allayed. It has to be admitted, however, that the medical profession paid hardly enough attention to the question of the constitution of the Free State Medical Council, and no discussion took place at any time between the representatives of the profession and the Government on the subject. The result is a singular confusion of procedure. The Bill departs from the principle of constitution of the General Council, by which each licensing body, whether university or corporation, was entitled to one member. It seems to adopt the principle of assigning one member to each school instead of to each licensing authority, but even this is thrown over, for one corporation which has no relation to a school is given a member. The result is neither logical nor possessed of practical merits. The principle underlying the constitution appears to be sound and not to be inconsiderately abandoned. The Council has to deal with the licensing body, rather than with the teaching body directly. It is for the body that grants the diploma to satisfy itself of the adequacy of the teaching which prepares for the diploma. The General Council has frequently inspected examinations, but has never thought it its duty to inspect teaching. In this respect the present Bill follows the same principle, for it gives power to the Medical Council to inspect examinations but none to inspect teaching. There seems to be no justification for the bringing of teaching institutions as such into direct relation with the Council. On the other hand, the grouping together of the two Royal Colleges for the nomination of one member seems an unnecessary economy. Probably a majority of practitioners in the Free State at present are on the Register by virtue of the possession of the diplomas of these bodies. Moreover, they are the only purely professional corporations in the Free State concerned with the qualification of medical practitioners, if one excepts the Apothecaries' Hall, the other licensing bodies being non-professional, such as the universities. It is undesirable that the lay element should have a supreme control in matters of medical education. On the Free State Medical Council as proposed in the Bill, five members out of nine will be appointed by lay authorities.

The right of appeal to the High Court is interesting, but is not likely to give rise to much opposition.

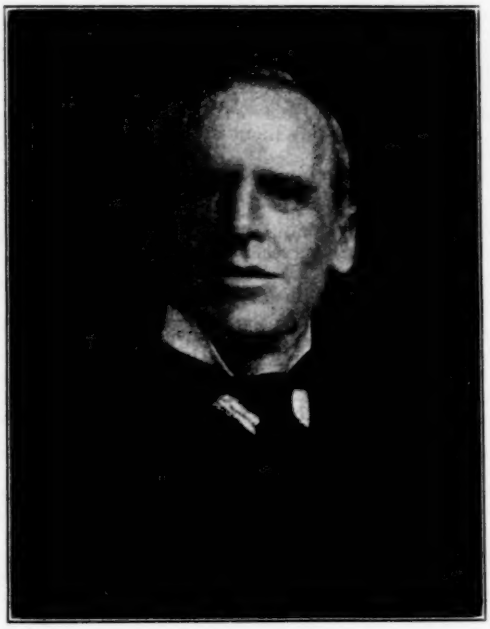
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—At the annual Court of Governors, Mr. H. E. West, the deputy chairman, said that the worst legacy the hospital had ever inherited was its cumbersome and little understood name, and that it would continue to be hampered by it "unless someone invented a good slang one." It was reported that the work at the country branch at Stanmore had exceeded expectations, and that £78,000 had been raised towards the £115,000 needed for extension there. There was an increase during the past year of more than 4000 in the number of out-patient attendances. The weekly cost of an in-patient at Stanmore is £1 13*s.* 9*d.*, about 14*s.* per week less than in London.

Obituary.

ERNEST HENRY STARLING, C.M.G., M.D., F.R.C.P. LOND., F.R.S.,

FOULERTON RESEARCH PROFESSOR OF THE ROYAL SOCIETY.

WE deeply regret to announce the death which occurred this week in Jamaica of Prof. Ernest Henry Starling, the distinguished physiologist, whose name is a household word in medicine in all countries of the world. He died on board the *Ariguaing* as the ship was nearing Kingston, the voyage having been taken for the benefit of his health, which had been indifferent for some time, although he did not allow this fact to interfere with the strenuous routine of the winter session. He had worked with characteristic intensity until very shortly before his departure, and it was hoped and believed that a few weeks' rest on board ship in a warmer climate, which he loved so much, would restore him, as it had done on previous occasions, to his customary vigour.



PROF. E. H. STARLING.

Ernest Starling was the eldest son of a barrister who practised in Bombay, and wrote a work on Indian legal procedure. He was educated at King's College School and, completing his medical course at Guy's Hospital, graduated in medicine at the University of London in 1888, after a brilliant career as a student, being exhibitioner and gold medallist at the University in physiology and chemistry, and University scholar in forensic medicine, while he also won the gold medal in botany of the Apothecaries Society. He was further helped substantially by the Grocers' Scholarship, and a scholarship from the British Medical Association. He proceeded to the M.D. degree in 1890 when he qualified for the University gold medal, and having continued his studies at Heidelberg under Kühne resolved to pursue physiology as a career. He held certain house appointments, but became demonstrator of physiology at Guy's Hospital in 1889 and joint lecturer in the subject in the following year, and for the next nine years he lectured on physiology in the medical school at Guy's, and also at the School of Medicine for Women. During this period he found time to study under Heidenhain in Breslau.

Starling's early career was much influenced by Leonard Wooldridge, who, returning to London from a visit to Ludwig at Leipzic, was fired with the newest and best ideals of experimental physiology; Starling worked with Wooldridge, and on the latter's early death was appointed to succeed him at Guy's, and was thus launched as a physiologist. The teaching of Heidenhain brought early fruit, for it was in consequence of this association that Starling took up the study of lymph formation to which he made important contributions, largely by the application of recently discovered data in the realm of physical chemistry. Starling taught physiology, and virtually created as well as ran the department of the subject at Guy's Hospital, from 1889 until he left Guy's to succeed Prof. Sharpey-Schäfer as Jodrell Professor at University College, London, in 1899.

At University College his achievements were of the highest, and his work for it and for the University of London was untiring, both single-handed and in association with his brother-in-law, William Bayliss. Always a high idealist he did everything to promote scientific work, not only in physiology but in many other departments of scientific activity, as is illustrated by the fact that he became a member of the governing body of the Lister Institute from the outset, and at his death had served thus for 20 years. At University College he planned and constructed the Institute of Physiology—a remarkable feat—and he also conceived the general scheme of the present block of medical science laboratories, with their own central library, which was subsequently made possible by the bequest from the Rockefeller Foundation.

A summary of Starling's scientific work must be attempted, though its far-reaching and prolonged nature must make such a notice imperfect. His earliest published work was on electric currents in the mammalian heart, and was written in collaboration with Bayliss in 1891, with whom in 1892 he also wrote on the parts of the heart affected by the sympathetic and accelerator nerves. In 1893 came a paper based on work done in Heidenhain's laboratory on the action of lymphagogues. He continued this work on lymph formation at Guy's, and during the next two years obtained results on which most of our present knowledge of capillary permeability and lymph and œdema formation depends. These researches introduced the fundamentally new idea that the rate of transudation was a function of the colloidal osmotic pressure on the one hand and the hydrostatic pressure on the other. This was followed by a series of papers on the action of lymphagogues and on the absorption of fluids from tissue spaces and serous cavities; this work led naturally to his investigations in 1899 of the glomerular functions of the kidney, in which he was led to the determination of the colloidal osmotic pressure of the blood-serum. This work synchronised with his election to the Royal Society. Much of his work between the years 1891–1905 was done in collaboration with Bayliss. This included their joint work on the innervation and movements of the intestines, and the mechanism of the secretion of pancreatic juice, which included the discovery of secretin in 1902, and which opened up new avenues of investigation which are still being explored. The next phase was the exact analysis of the action of asphyxia, especially on the circulation; this began about 1909 and ultimately led to the perfection of the heart-lung circulation preparation with which a great deal of his subsequent work was done. This preparation enabled the experimenter to control the mechanical conditions of the heart to an extent which had not previously been possible, and the research which was carried out by Starling and numerous professors, which is still in progress, led to the laboratories at University College becoming the focus for the work. It involves not only a detailed investigation of the mechanical conditions of the heart beat, but also is extended to include investigations of the coronary circulation and of the mechanism by which the rate and output of the heart is subjected to control.

During the last few years he was employing the heart-lung circulation as a means of investigating the mystery of urinary secretion.

Starling's practical work was admirably illustrated in his literary activities, books, lectures, and addresses. His first book, the "Elements of Human Physiology," was recognised at once to form a compact and all-round exposition of the main facts and theories of the science as then accepted; it formed a safe guide for the student and a good foundation for all on which to raise a superstructure of the knowledge obtainable from the study of more elaborate text-books, and, as edition followed edition, the results of general or special research were duly incorporated. A "Primer on Physiology" followed in 1904, in which a small volume, priced at 1s., actually conveyed to the reader the broad features of the functions by which life is maintained. The message that a knowledge of fundamental facts in physics and chemistry must be possessed before the complex processes carried on in the living body can be rightly observed or recognised as being manifestations of the laws of nature, was the text of all Starling's written work, and those who read the "Primer" in the early stage of their medical curriculum will remember how much it enabled them to follow with intelligence extended accounts of the physiological functions when placed before them in lectures. The same method of argument was followed in the Arris and Gale Lectures which he delivered before the Royal College of Surgeons of England in 1896, taking as his subject the physiological factors involved in the causation of dropsy. In these lectures he sketched the working in the normal animal of the processes of lymph production and lymph absorption, and proceeded to examine in detail the causation of dropsy, thus expounding the reasons, chemical and physical, which lay behind the pathological manifestations, and dictated the course of treatment and the technique adopted.

In 1897 Starling was elected a Fellow of the Royal College of Physicians of London, and in 1905 delivered the Croonian Lectures. In these he described the chemical correlation of the functions of the body, and vindicated the assumption, which is the basis of scientific medical practice, that the activities of the body are coördinated among themselves by the production and circulation of chemical substances. The descriptions of the classic investigations justifying the thesis were so clear that they must have formed for many medical men an introduction to far more strictly scientific views than they had previously held, or furnished them with the scientific reasons for the therapeutical procedures which they adopted. In the fourth of these lectures, Starling discussed the influences of the generative organs on the body as a whole, and on its parts, describing the researches with which Dr. Lane-Claypon was associated, and which introduced hormones to the general medical reader.

Shortly after came the discovery of secretin by Bayliss and Starling, and in Starling's last public delivery will be found his estimate of the meaning of that work.[1] The occasion was the first of the lectures delivered in connexion with the centenary celebrations of University College, London, in which Starling briefly reviewed a century of physiology, giving a masterly survey of the progress of the science from the time of Harvey to the third quarter of the nineteenth century, and then continued with a detailed summary of modern physiology. In this he dwelt but briefly on his own work, although he made a significant observation, as showing the continuity of his science, that he had returned to the questions which agitated Harvey, and which had been left by Harvey for future inquiry.

The "Principles of Human Physiology" made its appearance in 1915. This was a substantial and illuminating exposition, solid in substance and individual in its lines of the state of physiology, by one who had added so much to the science. Several editions have followed, the latest appearing in 1925, and as the work now stands it incorporates the advances made during the five years of war, and constitutes a comprehensive and suggestive treatise, valuable alike to advanced students and to practitioners.

During the war Starling saw much service. For the first two years after the outbreak of hostilities he was engaged as a medical officer with the Forces, holding the rank of Captain, and at Milbank, as Colonel, he was in charge of the anti-gas department. In 1916 he was appointed Chemical Adviser to the Salonika Forces, for which services he was appointed C.M.G., and the close of hostilities found him, after intensive work, on the Royal Society's Committee on Food Supplies, Scientific Adviser to the Ministry of Food. In this position he was able to bring his extraordinary knowledge into the practical service of his country. He kept before the public the need of continued scientific and statistical information while our present knowledge of many of the most important aspects of nutrition was so inadequate. In those critical times he explained the relations of food and health to public efficiency, and the public obtained from him just views on the quality and quantity of food necessary for the maintenance of health, and proper instruction as to national and individual food requirements. In the Oliver-Sharpey Lectures, delivered before the Royal College of Physicians, he summarised much of this teaching in a study entitled The Feeding of Nations, and he was then speaking as the British Delegate to the Inter-allied Food Commission. For all this important national work Starling received no adequate recognition from the State.

In 1923 he put the essence of his philosophy into the Harveian Oration, which he delivered before the Royal College of Physicians, under the title of The Wisdom of the Body. Here a dissertation on the physiological laws of the heart and the powers and limits of adaptation was followed by an eloquent explanation of the chemical integration of the body. He closed with an insistence on the injunction of Harvey, to search out and study the secrets of Nature by way of experiment, thus hoping to attain to a comprehension of "the wisdom of the body and the understanding of the heart, and the mastery of disease and pain."

Starling, who is among Harvey's greatest descendants, was one of the last general exponents of experimental physiology, and the position was granted to him by the scientific world. He served for several periods on the Council of the Royal Society, was a medallist of the Society and Vice-President in 1918–19. He received honorary degrees from Cambridge, where he had acted as an examiner, from Breslau, Strasburg, Sheffield, and Dublin, and was also Herter Lecturer in New York. He spread essential truth for 30 years and more, to the benefit of mankind.

His widow, who survives him, was a daughter of the late Sir Edward Sieveking, and he leaves by her three sons and one daughter. He was buried at Halfway Tree, three miles from Kingston, on May 3rd, in the presence of the Governor and medical staff of the island.

[1] THE LANCET, March 5th, 1927.

WILLIAM COLLINGRIDGE, M.D., LL.M., D.P.H. CAMB.

THE death of Dr. W. Collingridge, on April 29th, closes an eventful life which has proved of considerable service to the public, and especially to the City and Port of London, where he was for many years medical officer of health.

Born at Islington in 1854, William Collingridge was the eldest son of William Hill Collingridge, who founded and edited the *City Press*. He was educated at Clewer House, Windsor, and in 1875 went on to Christ's College, Cambridge. In June of the following year war broke out between Serbia and Turkey, and

Collingridge volunteered for service as surgeon with the Serbian forces. In spite of his youth he was given responsible work in the organisation of hospitals, and at the end of the campaign received the Order of Takova from King Milan. After his return to England he qualified as M.R.C.S. Eng. in 1877 from St. Bartholomew's Hospital, and graduated both in law and medicine at Cambridge, later being called to the Bar as a member of Gray's Inn. Two years of private practice followed, after which, in 1880, he was appointed medical officer of health for the Port of London. During the 20 years he held this office there was great advance in the practice of port sanitation, and Collingridge's part in the development of London's protective health service was a large one. His work was both responsible and difficult, and was the more conspicuous because during two continental epidemics of cholera he had to devise measures for guarding against the spread of the disease to this country. Problems of this kind interested him greatly, and he chose Quarantine as the subject of his Milroy Lectures,[1] delivered in 1897 before the Royal College of Physicians, in which he made an effective attack both upon the theoretical basis and practical application of the measure. It was not one, he said, that could usefully be enforced by a commercial country; it was expensive, it led to a false sense of security, and it involved serious danger to health from the detention of vessels in conditions that were often insanitary and kept people within range of infection. Sanitation and a rational system of medical inspection must prove more efficacious and less burdensome. Dr. Collingridge also showed himself a warm advocate of better conditions of life for the mercantile marine, and a good deal of the work which is gradually leading to their improvement has been done by men who became familiar with the work which won praise for his department. In 1901 he was transferred to the post of medical officer of health for the City of London in succession to Dr. Sedgwick Saunders, and here also, before his retirement in 1913, he was successful in his work for the public health. Not all his schemes were carried through without opposition, and at times he had to face a great deal of criticism, especially in regard to his crusade against the unclean conditions in which the oyster was bred and distributed for the London market. He did the same service for the cockle—the poor man's oyster, as he called it.

Outside his official duties, Dr. Collingridge was a keen soldier. At Cambridge he joined the University Rifle Corps, and on coming to London he was for ten years a member of the Honourable Artillery Company. His later service included seven years with the Volunteer Medical Staff Corps, and eight years as officer commanding the Militia Medical Staff Corps. Throughout the late war he was in charge of Auxiliary Military Hospital 112, in Kent. He lived for a long time in this county, but later moved to Berkshire, where he became a justice of the peace. The end of his life was spent at Pennington, in Hampshire.

Dr. Collingridge was a Knight of Grace of the Order of St. John of Jerusalem. He married a daughter of Captain Thomsett, C.M.G., R.N.

[1] THE LANCET, 1897, i., 715, 787, and 863.

POST-GRADUATE COURSES AT BERLIN.—A series of international post-graduate medical courses will be held at Berlin from Sept. 15th to Oct. 31st, under the auspices of the Kaiserin Friedrich-Haus, and with assistance from the medical faculty of the University. The medium of instruction will be German, but a number of lecturers speak English and other languages. Information about accommodation, expense of maintenance, and facilities for attending at clinics and hospitals may be had from the office of the Kaiserin Friedrich-Haus, 2-4, Luisenplatz, Berlin, N.W. 6. The office is willing to send particulars of German post-graduate instruction besides the short courses held between the above dates.

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on April 28th, the President, Sir John Rose Bradford, being in the chair. The following candidates, having satisfied the Censors' Board, were elected as members:—

Drs. Eric Harold John Berry, Sohan Lal Bhatia, George Frederick Buchan, Arthur Burrows, Robert Greenhill Cochrane, Elizabeth Mary Cowie, Edward Charles Dodds, Alfred Claude Mitchell Elman, John Bell Ferguson, Frederick James Theodore Foenander, Ian Wolfe Gallant, Dorothy Gibson, Arthur Cecil Hampson, Alan Trevor Jones, Georges Klionsky, Allan Dunstan Lamphee, Joseph Tegart Lewis, Frederic Ernest Loewy, John Allison Macfadyen, Eugene McLaughlin, Peter Henry Martin, Peter Milligan, Henry Seaward Morley, Cyril Thomas Piper, Alice Campbell Rose, Leonard Victor Snowman, Saravanamuttu Somasundram, Thomas Harold Thomas, and Neil Thorburn Melrose Wigg.

The following were elected to the Fellowship on the nomination of the Council:—

Drs. William Smith Paget-Tomlinson, George Hall, Donald Elms Core, Henry Pratt Newsholme, Arnold Walmsley Stott, Georg Herman Monrad-Krohn (Christiania), Thomas Henry Gostwyck Shore, Vivian Bartley Green-Armytage, Reginald St. George Smallridge Bond, Maurice Davidson, Thomas Izod Bennett, Edward Mapother, Charles Frederick Terrence East, and Hugh Maclean.

Nominated by Council under By-law XXXVII. (*b*): Dr. Andrew Balfour and Sir Squire Sprigge.

The Registrar moved for the first time the following temporary by-laws, both of which were passed:—

1. That Georg Herman Monrad-Krohn, being resident in Norway, be admitted to the Fellowship *in absentia*, any by-law to the contrary notwithstanding.

2. That Vivian Bartley Green-Armytage, being resident in India, be admitted to the Fellowship *in absentia*, any by-law to the contrary notwithstanding.

Licences to practise were conferred upon 164 candidates (135 men and 29 women) who have passed the Final Examination in medicine, surgery, and midwifery of the Conjoint Board, and have complied with the by-laws of the College. The following are the names and medical schools of the successful candidates:—

V. H. Addison, St. Bart.'s; B. W. Alexander, Cambridge and St. Bart.'s; Sophia A. P. Allen, Charing Cross; R. G. Apthorpe, Cambridge and St. Thomas's; H. E. C. Aslett, St. Mary's; H. Aziz, Manchester; J. D. Bailey, St. George's; W. B. Ballenden, Birmingham; G. H. Barendt, Cambridge and St. Bart.'s; J. F. L. Barnes, Cambridge and St. Thomas's; C. J. Bashall, St. Thomas's; A. Batty, Madras and Middlesex; H. Bell, Cambridge and St. Thomas's; T. G. Benjamin, Guy's; C. P. J. Bester, Cape and St. Thomas's; H. O. Blauvelt, Dalhousie and Univ. Coll.; Dorothy Bolton, Charing Cross; E. J. Boschi, Cambridge and Leeds; W. J. Branday, Birmingham; I. G. Briggs, Birmingham and London; C. F. Brockington, Cambridge and Guy's; R. Bruce, Leeds; E. Burton and W. A. Busby, London; E. N. Butler, Oxford and King's Coll.; G. D. G. Cameron, Cambridge and Leeds; Emily E. Cass, Royal Free and St. Mary's; K. B. Chakravarti, London; A. D. Charters, Cambridge and St. Thomas's; R. L. Cheverton, Birmingham; E. T. Clifton, Guy's; Mary C. E. Constantine, Royal Free; C. B. Crofts, St. Mary's; W. V. Cruden, St. Bart.'s; A. R. Culley, Cardiff; R. Cunningham and S. F. L. Dahne, Cambridge and St. Bart.'s; B. G. Dain, Cambridge and Birmingham; B. B. Dalal, Univ. Coll.; S. D. Dalal, Middlesex; K. E. D. Dauncey, Cambridge and King's Coll.; C. S. Davies, St. Bart.'s; T. G. Davies, Cardiff and St. Bart.'s; L. F. Day, St. Bart.'s; R. S. deBruyn, Cape and Guy's; S. J. de Navasquez, Guy's; C. H. Dhala, London; Elsie M. Douglas, Univ. Coll.; Grace C. Evans, Royal Free; R. V. Farr, Birmingham; Isabella Forshall, Royal Free; K. M. Foster, Birmingham; G. H. Froggatt, Sheffield; J. Furman, Durham; A. A. H. Fyzee, Bombay and Univ. Coll.; H. S. Gaussen, Guy's; F. W. Gayford and H. C. Geldard, Middlesex; H. Girling, Cambridge and Guy's; V. A. Goldman, Birmingham; J. M. Graham, Cambridge and London; Marion L. Grimmer, Westminster; L. C. Gunasekara, King's Coll.; A. L. Gunn, Cardiff; Vivienne M. Gunson, King's Coll.; A. K. Gupta, Calcutta and London; V. C. J. Harris, Cambridge and Manchester; W. R. E. Harrison, St. Bart.'s; J. A. Hartley, Cambridge and St. Thomas's; A. H. B. Heesom, Guy's; Kathleen Heyes, Royal Free; C. A. N. Hicks, Guy's; F. R. How, St. Thomas's; W. Hyman, Leeds; R. E. Isaac, Cardiff; Ausa H. Jackson, Royal Free; M. I. Jackson and Amy L. Jagger, Cardiff; L. R. Janes, Cambridge and St. Bart.'s; Margaret E. Jones, St. Mary's; W. P. Jones, Cambridge and Univ. Coll.; W. B. R. Jones, Cardiff and St. Thomas's; J. Joseph, Cape and Middlesex; R. Kahn, Cape and London; R. W. Kenney, Dalhousie and London; S. M. Kharegat, Bombay and St. Bart.'s; N. A. King, Cape and St. Bart.'s; R. A. King, St. Mary's; H. J. Krichefski, Univ. Coll.; A. H. Lankester, Cambridge and St. Thomas's; P. G. Levick, Cambridge and St.

Bart.'s; O. I. Lewis, London; S. C. Lewsen, Guy's; Margaret I. Little, St. Mary's; L. G. Llewellyn, Guy's and Middlesex; P. V. MacGarry, Dublin and London; Annie M. McGrath, Westminster; H. Mallinson, Cambridge and St. George's; Nancy S. Marshall, Royal Free and St. Mary's; T. W. Masters, Birmingham; S. P. Meadows, Liverpool; Gwendolen E. M. Meyer, Charing Cross; F. J. Milward, Cambridge and St. Thomas's; J. K. Moore, Cambridge and Guy's; Barbara E. M. Morris, St. Mary's; F. B. Mulvany, London; J. H. Mulvany, King's Coll.; Sybille L. Myers, Royal Free; K. G. Nerurkar, Bombay and Guy's; C. G. M. Nicol, Charing Cross; M. G. Nimatallah, Cairo and London; Jessie G. A. Norman, Charing Cross; T. St. M. Norris, Cambridge and London; R. E. Norrish, St. Bart.'s; M. D. Nosworthy, Cambridge and St. Thomas's; Audrey S. Nunn, Charing Cross; A. B. Nutt, Sheffield; D. E. Oakley, Cambridge and St. Bart.'s; R. Oddie, St. Thomas's; C. E. Ogden, Toronto and St. Bart.'s; R. L. Osmaston, Cambridge and Univ. Coll.; B. N. Pajnigar, Bombay and London; Maud Palmer and Marjorie E. Parfitt, Royal Free; Florence M. Parsons, Charing Cross; G. E. B. Payne, Univ. Coll.; E. A. Pye, Cambridge and St. George's; A. Rabinowitz, Guy's; M. Ragheb, Cairo and Middlesex; Marjorie M. Readman, Leeds; D. V. Rice, London; R. I. Richards, Cardiff and St. Bart.'s; W. H. Roberts and S. Rodker, St. George's; S. F. Russell, St. Bart.'s; J. C. Saldanha, Univ. Coll.; S. W. Savage, Cambridge and Univ. Coll.; W. H. Scott-Easton, Cambridge and Westminster; W. H. Scriven, Cambridge and King's Coll.; S. Shalaby, Cairo and London; N. H. Skelton-Browne, Guy's; L. A. P. Slinger, Cambridge and St. Bart.'s; F. C. Smith, London; H. M. S. Stanley, Cardiff; J. F. Stent, Cambridge and St. Thomas's; Florence V. Stephen, Manchester; T. C. Stevenson, Cambridge and St. Thomas's; G. R. S. Stewart, Cambridge and Guy's; B. M. Sundaravadanan, Madras and Guy's; A. G. S. Tabb, Charing Cross; W. H. Tandy, Birmingham; W. E. Underwood, Cambridge and St. Bart.'s; C. W. Walker, Cambridge and St. Thomas's; J. Wasserstein, London; C. F. Watts, Cambridge and St. Bart.'s; Maeve Whelen, Royal Free; G. D. D. Wijesekere, Middlesex; D. A. J. Williams and M. G. Williams, Cardiff; H. M. Willoughby, St. Bart.'s; C. G. Windsor, Cambridge and St. Thomas's; Elsie B. Wright, Royal Free; M. Yankelovitch, Middlesex; and Margaret I. Yeatman, Charing Cross.

Dr. Fawcett was re-elected a representative of the College on the Senate of the University of London.—The death of the late Junior Standing Counsel to the College, Mr. Dighton Pollock, was announced. The President nominated Mr. C. Stafford Crossman, of Lincoln's Inn.—The President announced that he had nominated, pending confirmation by the College, Dr. C. O. Hawthorne, on behalf of the College, to serve on a Departmental Committee appointed by the Ministry of Health to consider a draft Bill prepared by the Joint Committee of Qualified Opticians to provide for the registration of optical practitioners and to regulate the practice of sight testing. The nomination was confirmed.—The Registrar reported that the President attended the reception of delegates to the Lister Centenary Celebration by the Prime Minister, at the British Medical Association's house on April 5th, as the representative of the College, and presented an address; and that the President, censors, and all the other College officers, with the exception of the treasurer who was out of England, attended the service at Westminster Abbey on the morning of April 6th.—Dr. H. Morley Fletcher, the senior censor, was appointed a delegate to represent the College at the celebration of the centenary of University College, London, on June 23rd, 1927.—Dr. R. D. Rudolf was appointed a delegate to represent the College at the celebration of the centenary of the granting of the Charter of King's College, Toronto, to be held on Oct. 6th, 1927, and two following days at Toronto.—Dr. S. W. Wheaton was appointed a delegate to represent the College at the Third Imperial Social Hygiene Congress, to be held at the Caxton Hall, Westminster, from Oct. 3rd to Oct. 7th, 1927.—Dr. C. H. Bond was appointed a delegate to represent the College at the commemoration of the centenary of the death of Pinel and the birth of Vulpian, to be held in Paris on May 30th and 31st, 1927.—A report was received from the committee appointed to make suitable arrangements for the celebration of the Harvey Tercentenary in 1928. It was decided that the celebration should have both a social and a scientific character. The committee was empowered to proceed with these arrangements.—The books and other donations presented to the library during the last quarter were received and the thanks of the College returned to the donors. Special mention was made of a gift of six or seven very valuable books from Dr. Herbert Spencer.

After some further formal business, the President dissolved the Comitia.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this Society will be held at the Miller General Hospital, Greenwich, on Friday, May 13th, at 8.45 P.M., when Dr. H. Nockolds will deliver a presidential address entitled the Poor-law Hospital and its Relation to General Practice.

UNIVERSITY OF LONDON.—At recent examinations the following candidates were successful:—

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

With Special Knowledge of Psychiatry.—Isaac Atkin, G. C. Berg, Arthur Darlington, Florence M. Gamble, P. L. Goitein, J. F. Williams.

With Special Knowledge of Mental Deficiency.—George Brown, Mary V. Littlejohn, Walter Wyatt.

Medical Scholarships of the University of London: Six medical entrance scholarships and exhibitions of an aggregate total value of £513, tenable at University College and in the medical schools of University College Hospital, the London Hospital, and the London (R.F.H.) School of Medicine for Women, are being offered. The examination will begin on June 28th, and full particulars may be had from the Secretary of the Board, Mr. S. C. Ranner, at the Medical School, King's College Hospital, Denmark Hill, London, S.E. 5.

London Hospital Medical College (University of London): The Schorstein Memorial Lecture will be delivered by Prof. Knud Faber, of the University of Copenhagen, on Thursday, May 19th, at 4.15 P.M., in the anatomical theatre of the College. The subject will be Gastritis: its Relation to Achylia and Ulcer. Members of the profession are invited to attend.

London Hospital Dental School.—A special lecture on Recent Medical and Dental Research on Accessory Food Factors in Relation to Diseases of the Teeth will be given by Dr. J. Sim Wallace on Monday, May 9th, at 5 P.M., in the anatomical theatre. Members of the medical and dental profession are invited to attend.

UNIVERSITY OF MANCHESTER.—Dr. J. Webster Bride has been appointed lecturer, Dr. K. V. Bailey assistant lecturer, and Dr. J. W. A. Hunter demonstrator in obstetrics and gynæcology. Mr. E. E. Hughes and Mr. A. H. Southam have been appointed lecturers in operative surgery.

UNIVERSITY OF BIRMINGHAM.—The Ingleby Lectures will be delivered on May 11th and 18th, at 4 P.M., in the Medical Lecture Theatre (Edmund-street Buildings), by Dr. George F. Still, on Place in Family as a Factor in Disease in Childhood. Members of the medical profession are invited to attend.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART. The "St. Cyres" Lecture will be delivered by Dr. J. Strickland Goodall at this hospital on Tuesday, May 31st, at 5 P.M. The subject will be Some General Aspects of Myocarditis. Tickets of admission from the Secretary at the hospital.

The practice of the National Hospital for Diseases of the Heart is now open to students who have completed four years of medical study, and short courses of instruction in cardiology will be held immediately preceding the final examinations. Particulars may be had from the Secretary.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Wednesday, May 11th, Mr. Sidney Boyd will give a special demonstration in surgery at the Hampstead General Hospital, and on the same date, at 12 noon, Mr. Greeves will demonstrate at the Royal London Ophthalmic Hospital. On Thursday, May 12th, at 1.30 P.M., Sir Thomas Horder will give a demonstration at St. Bartholomew's Hospital. All members of the medical profession are invited to attend, without fee, these demonstrations arranged by the Fellowship. Courses already in progress include one in urology at the All Saints' Hospital, one in psychological medicine at the Maudsley Hospital, and one in venereal diseases at the London Lock Hospital; whilst on Wednesdays a series of lecture-demonstrations on antenatal diagnosis and treatment is being given at the Royal Free Hospital by Prof. Louise McIlroy. The Central London Throat, Nose and Ear Hospital will hold an intensive course from May 9th to 28th, consisting of clinical and operative instruction. The entry is limited, and early application is desirable. The National Hospital, Queen-square, will give a course from May 9th to July 15th, consisting of clinical lectures and demonstrations, teaching in the out-patient department, besides a course in neurological anatomy and physiology, and one in methods of examination. From May 16th to 28th the Infants Hospital will hold a course in diseases of infants; and the Hampstead General Hospital a course, especially for general practitioners, in medicine, surgery, and the specialties (4.30 to 6 P.M.) The Fellowship can arrange practical courses in obstetrics and anæsthetics, and also make arrangements for clinical assistantships in gynæcology. A general course of instruction is provided at the hospitals associated with the Fellowship. Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

Sir Berkeley Moynihan has been appointed a Deputy Lieutenant of the West Riding of the County of York.

IRISH MEDICAL ASSOCIATION.—The Council has nominated Dr. H. T. Warnock, Donegal, to the Presidency of this Association, and Mr. P. E. Hayden, F.R.C.S.I., to the Vice-Presidency. Dr. Warnock has been Vice-President for the past two years.

LEIGH INFIRMARY.—Extensions of the Leigh Infirmary, Lancashire, and the new nurses' home were opened on April 30th. The number of available beds will now be 70, and for the first time there will be a resident house surgeon.

YORKSHIRE REFRACTION HOSPITAL.—The Lord Mayor of York, Alderman Oscar F. Rowntree, has opened this hospital at Leeds; it is said to be only the second of its kind in the world. It has been founded by the Yorkshire Optical Society, with the primary objects of training in hospital practice students taking up optical work, and of providing spectacles for necessitous people. Facilities are provided for extended practice in advanced refractive technique, with opportunities for clinical instruction and research, and there will be a voluntary staff.

SHANTUNG CHRISTIAN UNIVERSITY.—Arrangements have been made for carrying on this University's work and that of the University Hospital now that the foreign staff has been compelled by consular order to withdraw from Tsinan. The University is supported by 14 British, American, and Canadian societies, and a Chinese executive committee has now been formed, including Dr. P. C. Kiang (Associate Dean of the School of Medicine), who is a biochemist, and is hoping to begin research at Cambridge at the end of this year under Sir F. G. Hopkins. The medical service of the hospital will be conducted by a group of Chinese doctors, graduates of the University School of Medicine. The acting president of the University, Rev. J. D. MacRae, writes in warm terms of the helpful and friendly spirit which has been shown by all sections of the Chinese community.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE. The Government of India has invited the Far Eastern Association of Tropical Medicine to hold its seventh Congress in India in December next. The Congress will open at Calcutta on Dec. 5th, and scientific sessions will occupy the first week. The official delegates of the various countries will then visit other parts of India as guests of the Government. The Congress and tour will end on Dec. 22nd. These dates are provisional. Particulars of the Congress may be had from the General Organising Secretary, Lieut.-Colonel J. Cunningham, I.M.S., Pasteur Institute, Kasauli, Punjab, British India.

ROYAL INSTITUTION.—The annual meeting of the members of this institution was held on May 2nd, Sir Arthur Keith, treasurer and vice-president, in the chair, when the annual report of the Committee of Visitors for 1926 was read and adopted. The report of the Davy Faraday Research Laboratory Committee was also read; 64 new members were elected in 1926, and 78 lectures and 19 evening discourses were delivered. The books and pamphlets presented amounted to about 229 volumes, making, with the 569 volumes purchased, a total of 798 volumes added to the library in the year. The officers elected unanimously for the ensuing year were: President, the Duke of Northumberland; Treasurer, Sir Arthur Keith; Secretary, Sir Robert Robertson. The Managers include Sir James Crichton-Browne, Dr. J. Mitchell Bruce, and Sir Almroth Wright.

CARE OF MENTAL DEFECTIVES.—Speaking at the post-graduate week of the College of Nursing, held at Manchester from April 25th to 30th, Dr. W. G. Thomson, deputy superintendent of the Cheadle Royal Asylum, raised the question how far the liberties of mental defectives ought to be restricted. Realising that in the majority of cases no cure but only an amelioration of the condition was possible, it remained to consider how this might be effected. Much depended on the social and economic position of the parents. The vast majority of defectives could not be cared for within the family circle. At present the difficulty was that accommodation was insufficient for all the cases requiring treatment. Even if this was surmounted there was always the argument that force must not be used, that the law must not be invoked to separate the kind parents from a member of the family who was the object, possibly, of more affection than the normal children. It did not appear wise to be too sentimental, and such cases were more often happy in institutions than they were at home. At institutions they received specialised attention, and were kindly and humanely treated. The real question at issue was whether the good of the child was to be subordinated to the liberty of the parents. As to the problem of propagation he thought segregation was the remedy that appealed to most people.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY, Burlington House, Piccadilly, W.
THURSDAY, May 12th.—4.30 P.M., Discussion Meeting on the Function and Distribution of Living Organisms of Hæmoglobin and Related Substances. *Speakers:* Prof. J. Barcroft, Dr. H. Hartridge, Sir Frederick Hopkins, Dr. D. Keilin, Mr. F. J. W. Roughton, Mr. R. Hill, Prof. H. M. Fox, and Dr. J. B. S. Haldane. Demonstrations will be given from 4 to 4.30 and from 6 to 6.30 P.M.

ROYAL INSTITUTION, 21, Albemarle-street, W.
FRIDAY, May 13th.—9 P.M., Concerning Old Age: Sir Humphry Rolleston.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, May 10th.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Annual General Meeting; Election of Officers and Council. Paper: Sir William Willcox, Dr. F. A. Pickworth, and Dr. Helen Young: The Clinical and Pathological Effects of Hypnotic Drugs of the Barbituric and Sulphonal Groups. 5.30 P.M., PSYCHIATRY. Annual General Meeting: Election of Officers and Council.
WEDNESDAY.—5 P.M., SURGERY: SUBSECTION OF PROCTOLOGY. Annual General Meeting: Election of Officers and Council. Discussion on Colostomy. Openers: Mr. W. Ernest Miles and Mr. W. B. Gabriel. The discussion will be continued by Sir James Berry, Sir Charles Gordon-Watson, Mr. R. P. Rowlands, Mr. Norbury, and others. There will be a demonstration of colostomy belts of different patterns.
THURSDAY.—6 P.M., NEUROLOGY. Annual General Meeting: Election of Officers and Council.
FRIDAY.—5.30 P.M., CLINICAL. (Cases at 5 P.M.) Annual General Meeting: Election of Officers and Council. Cases: Mr. P. Turner: (1) Case of Fractured Patella Wired in 1889; (2) Gumma of the Liver. Dr. C. F. T. East: Case of Facial Hemiatrophy with Diaphragmatic Tic. Mr. E. G. Slesinger: Arteriovenous Aneurysm with Bullet Retained in Heart Muscle. Dr. Burrell: Case of Lymphadenoma. Mr. Lambrinudi: Case for Diagnosis. Dr. Parsons-Smith: Transposition of Viscera with Cardiac Complications. Dr. Krestin: (1) Aneurysmal Swelling of Neck with Spontaneous Disappearance; (2) Dextrocardia without Complete Visceral Transposition and with Acquired Heart Disease. Mr. St. J. D. Buxton: Case of Exophthalmos cured by Carotid Ligation. Cases will also be shown by Dr. Worster-Drought, Mr. W. E. Tanner, and Mr. L. R. Broster. 8.30 P.M., OPHTHALMOLOGY. (Cases at 8 P.M.) Papers: Dr. Freeland Fergus: (1) Some Facts of Peripheral Vision: (2) Mr. Percival Pott on the Treatment of Lachrymal Fistula. Dr. J. Hamilton McIlroy: The Art of a Super-oculist.
SATURDAY AND SUNDAY.—BALNEOLOGY AND CLIMATOLOGY. Annual Provincial Meeting at Llandrindod Wells.

BIOCHEMICAL SOCIETY.
SATURDAY, May 7th.—3 P.M. (in the Physiology Dept., the University, Oxford-road, Manchester). Communications: Kathleen Culhane and S. W. F. Underhill: Variations in the Serum Calcium of Rabbits. F. C. Happold: The Attempted Isolation of a Type Precipitinogen from *B. ærtrycke*. Mutton. P. W. Clutterbuck: Experiments on the Origin of Succinic Acid in Muscle and Liver. C. E. M. Pugh and H. S. Raper: The Action of Tyrosinase on Phenols. E. Boyland and A. D. Ritchie (introduced by H. S. Raper): Chemical Changes in Muscle. J. Pryde and J. M. Peterson: The Carbohydrate-phosphate Component of Animal Nucleic Acid. J. Pryde and E. T. Waters: Some Observations on Methylated Glycerophosphates. T. K. Walker and P. D. Coppock (introduced by H. S. Raper): Fermentation of Propionic Acid by Aspergillus niger. Ellen Stedman and E. Stedman: Hæmocyanin. Part IV. The Dependence of the Shape of the Oxygen Dissociation Curve on the State of Ionisation of the Protein.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, May 9th, to SATURDAY, May 14th. FELLOWSHIP OF MEDICINE. Mr. Sidney Boyd will give a demonstration at the Hampstead General Hospital on Wed., 2 P.M. On the same day at 12 noon, Mr. Greeves will demonstrate at the Royal London Ophthalmic Hospital. On Thurs., Sir Thomas Horder will give a demonstration at St. Bartholomew's Hospital at 1.30 P.M. These demonstrations are free to members of the medical profession.—ALL SAINTS' HOSPITAL, Vauxhall Bridge-road, S.W. Afternoons and evenings, demonstrations, including cystoscopies and lectures.—LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh Gardens, N.W. Tues., Dr. Manson-Bahr; Thurs., Dr. Low: Lecture-demonstrations.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Wed., 5 P.M., demonstration by Prof. McIlroy; 5.15 P.M., Lecture-demonstration by Dr. Heald.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. Comprehensive course in medicine, surgery and gynæcology.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C. Intensive course, including operative classes. LONDON LOCK HOSPITAL, Dean-street, W. Clinical Course and formal

lectures daily.—MAUDSLEY HOSPITAL, Denmark Hill, S.E. Special course in Psychological Medicine. Further information from the Secretary.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, May 9th.—10 A.M., Mr. MacDonald: Genito-Urinary Operations. 2 P.M., Dr. Ironside: Medical Out-patients. 5 P.M., Staff Consultation.
TUESDAY.—10 A.M., Medical Registrar: Ward Demonstration. 2 P.M., Mr. Addison: Operations. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—10 A.M., Dr. Owen: Medical Diseases of Children. 12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Scott-Pinchin: Medical Out-patients.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Mr. Donald Armour: Operations. 2 P.M., Mr. Bishop Harman: Eye Department.
FRIDAY.—10 A.M., Dr. Dowling: Skin Department. 11 A.M., Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Department.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy and Ward Visit. 10 A.M., Dr. Owen: Medical Diseases of Children.
Operations, Medical, Surgical and Special Out-patients daily, 10 A.M., to 5 P.M., Saturdays, 10 A.M. to 1 P.M.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, May 9th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations. 4.30 P.M., Special Demonstration on Selected Cases of Nerve Diseases by Dr. L. R. Yealland.

KING'S COLLEGE, Strand, W.C.
TUESDAY, May 10th.—5 P.M., Prof. R. J. S. McDowall: Autonomic Nervous System. (Second of four free lectures.)

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter-street, W.C.
MONDAY, May 16th.—5.30 P.M., Prof. H. Beckwith Whitehouse: The Menstrual Function. (First of three free lectures.)

INSTITUTE OF PATHOLOGY AND RESEARCH, St. Mary's Hospital, W.
THURSDAY, May 12th.—5 P.M., Dr. R. A. O'Brien: Streptococci: their Toxins and Antitoxins.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
TUESDAY, May 10th.—3.15 P.M., Mr. J. B. Hunter: Ulcer of the Stomach.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, May 10th.—5 P.M., Dr. Wilfrid Fox: Seborrhœic Affections.
THURSDAY.—5 P.M., Dr. Graham Little: Lichen Planus.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, May 10th.—4.15 P.M., Dr. A. H. Holmes:—Pericarditis.
FRIDAY, 4.15 P.M., Dr. W. Dyson: Demonstration of Skin Cases.

Appointments.

WHEATLEY, ELIZABETH, M.B., Ch.B., Glasg., D.P.H. Edin., has been appointed Assistant Medical Officer of Health for Burnley.

Manchester Royal Infirmary: SCOTSON, F. H., F.R.C.S. Eng., Resident Surgical Officer; KEDDIE, J. T. C., M.B., Ch.B. Manch., House Surgeon to the Special Departments; PRENTICE, Miss M. I., M.B., Ch.B. Manch., Clinical Assistant, Medical Out-patient Department; STEPHEN, F. V., M.B., Ch.B., Clinical Assistant, Surgical Out-patient Department.

Certifying Surgeons under the Factory and Workshop Acts: SMITH, K. V., L.R.C.P. Lond., M.R.C.S. (Rocester, Stafford); JACKSON, R. H., L.R.C.P. Lond., M.R.C.S. (Bakewell); QUANBROUGH, F. K. B., L.R.C.P. Lond., M.R.C.S. (Tudeswell, Derby).

Vacancies.

For further information refer to the advertisement columns.

Barrow-in-Furness, North Londsdale Hospital.—H.S. £130.

Birmingham University.—Asst. Lecturer in Physiological Dept. £300.

Brighton, Royal Sussex County Hospital.—H.S. £150. Also Cas. H.S. £120.

Carshalton, Surrey, Queen Mary's Hospital for Children.—Senior Asst. M.O. £650.

City of London Maternity Hospital, City-road, E.C.—Asst. Res. M.O. At rate of £80.

Cyprus.—Specialist in Venereal Diseases. £700.

Eastbourne, Princess Alice Memorial Hospital.—Jun. Res. H.S. At rate of £100.

Elizabeth Garrett Anderson Hospital, Euston-road.—H.P., Obstet. Asst., and two H.S.'s. Each at rate of £50.

Finsbury, Metropolitan Borough of.—Asst. M.O.H. £600.

Freemason's Hospital and Nursing Home, 237, Fulham-road, Chelsea, S.W.—Res. M.O. At rate of £250.

Golden-square Throat, Nose, and Ear Hospital, Piccadilly-circus, W.—H.S. £100.

Grove Park Hospital, Lee, S.E.—Jun. Asst. M.O. £500.

Hampstead and North West London Hospital, Haverstock Hill, N.W.—Phys. to Out patients.

Hong-Kong.—M.O.H. £750.

Ilford Borough, Infant Welfare Centres.—Asst. M.O. £1 11*s.* 6*d.* per session.

Infants Hospital, Vincent-square, Westminster.—H.P. At rate of £75.

Liverpool, Highfield Sanatorium for Tuberculosis.—Asst. Res. M.O. £350.

London Jewish Hospital, Stepney Green, E.—Res. M.O. Also Jun. Res. M.O. At rate of £150 and £100 respectively.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Anæsthetist. 52 guineas.

Newark Hospital.—Res. H.S. £200.

Norwich, Norfolk and Norwich Hospital.—H.S. £120.

Queen's Hospital for Children, Hackney-road, E.—Cas. O. At rate of £100.

Royal Free Hospital, Gray's Inn-road, W.C.—Res. Anæsthetist. Also Hon. Asst. Radiologist.

Royal Northern Hospital, Holloway, N.—H.S. At rate of £70.

St. Albans and Mid. Herts Hospital and Dispensary.—Res. H.S. £150.

St. Bartholomew's Hospital.—Asst. Dental Surg.

St. John's Hospital, Lewisham, S.E.—Phys. to Skin Dept.

St. Paul's Hospital, Endell-street Holborn, W.C.—Hon. Radiologist.

St. Thomas's Hospital.—Anæsthetist.

Sheffield Royal Hospital.—Res. Anæsthetist. At rate of £80.

Stirling District Mental Hospital, Larbert.—Second Asst. M.O. £275.

Walsall General Hospital.—Jun. H.S. At rate of £125.

West London Hospital, Hammersmith-road, W.—Hon. Med. Radiologist. Also Asst. P.

West End Hospital for Nervous Diseases, Gloucester Gate, Regent's Park, N.W.—Sen. H.P. and Jun. H.P. At rate of £150 and £100 respectively.

West Riding Mental Hospital, Menston, near Leeds.—Jun. Grade Asst M.O. £400.

Western Ophthalmic Hospital, Marylebone-road, N.W.—Hon. Asst. S.

West London Hospital, Hammersmith-road, W.—Aural and Ophthalmic H.S. and Asst. Res. Cas. O. At rate of £100.

Westminster Hospital, Broad Sanctuary, S.W.—Fourth Asst. S. and fourth Asst. P.

York County Hospital.—H.S. £150.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Birtley (Durham), and at Hemsworth (Yorks, W. Riding.)

Births, Marriages, and Deaths.

BIRTHS.

COOPE.—On April 26th, the wife of G. M. Coope, M.R.C.S., D.P.H., Queen's park, Manchester, of a daughter.

MANN.—On April 27th, at High West-street, Dorchester, Dorset, the wife of E. W. Mann, of a son.

SNEYD.—On April 26th, at Harley-street, the wife of George C. Sneyd, F.R.C.S.I., of a daughter.

MARRIAGES.

CARSON—HONEYWILL.—On April 20th, at St. Barnabas, Addison-road, Kensington, Dr. Hugh Carson, of Selly Oak Hospital, Birmingham, to Kathleen, youngest daughter of Mr. William Honeywill, of 92, Oakwood Court, Kensington (late of Adelaide, South Australia).

COLE—FINLAYSON.—On April 28th, at St. Mary's Church, Chiddingfold, Surrey, Leslie Barrett Cole, M.D., to Mary, younger daughter of Surg.-Captain H. W. Finlayson, D.S.O., R.N. (retd.)

ISBISTER—HENDERSON.—On April 26th, at Edinburgh, Rollo Isbister, M.B., Ch.B., to Nita, youngest daughter of the late James Henderson, 31, Queen's crescent, Edinburgh.

PERKINS—SPEEDY.—On April 30th, in Henry VII.'s Chapel, Westminster Abbey, Alan Christopher Temple Perkins M.C., M.B., B.S., to Doris Macdonald Speedy, only daughter of Percy Speedy, Esq., A.M.I.E.E., of Lynton, Worcester Park, Surrey.

SAWARD—EDWARDS.—On April 28th, at the Parish Church, Ardingly, Sussex, Arthur H. M. Saward, M.R.C.S. Eng., L.R.C.P. Lond., to Gavine, elder daughter of the late Ernest William Edwards, Esq., of Heeleakah, Assam, and the late Mrs. Gardiner, of The Old Court House, Richmond, Surrey.

DEATHS.

BATTERBURY.—On May 2nd, at Berkhamsted, Richard Legg Batterbury, M.D., aged 83.

CAMPBELL.—On April 23rd, at Shian, Woodcote road, Wallington, suddenly, Patrick Edward Campbell, M.B., C.M. Edin., in his 71st year.

SMYTH.—On April 28th, at "Lota," Gerrards Cross, Bucks, William John Smyth, M.D., late of Southport, aged 81.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

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An Address
ON
FAILURES OF PROSTATECTOMY.

Delivered before the Manchester Surgical Society on March 22nd, 1927,

BY SIR JOHN THOMSON-WALKER, M.B. EDIN., F.R.C.S. ENG.,

SENIOR UROLOGIST AND LECTURER ON UROLOGY, KING'S COLLEGE HOSPITAL; SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND OTHER URINARY DISEASES.

WE have left behind the phase of prostatectomy where the mere fact of recovery from the operation is looked upon as a sufficient vindication of the skill and foresight of the surgeon; where the sole measure of success is the tally of the patients who leave the home or hospital alive. That is, of course, the first criterion as to whether the operation is worth doing or not. But having achieved a mortality figure that is low[1] considering the age of the patients operated upon (67·2 years), and the fact that the operation affects a vital organ and is a severe operation, we must be prepared to go a step further and inquire into the quality of the success which has followed the recovery from the operation.

A patient who is left with a suprapubic fistula following the removal of a simple enlarged prostate is in a very much worse plight than if he had refused operation and resorted to catheter life. A patient whose prostatectomy wound has healed but who has great difficulty in passing water and has to be relieved by catheter or must submit to repeated dilatations of the urethra is no better off for the operation. He is, in fact, worse off, for catheterisation before his operation was probably a simple matter, whereas after the operation it is extremely difficult. A patient with a previously sterile urine who since his operation has suffered from cystitis, recurrent attacks of pyelitis, or of epididymitis, cannot be said to have improved his comfort or increased his prospect of life by having his prostate removed.

These and some other types I should classify as failures of the operation of prostatectomy. It is, I think, worth while considering how these failures come about and how they may be prevented or remedied, and this will be the subject of my remarks.

The causes of these failures may be reduced to two fundamental factors—namely, sepsis and obstruction.

SEPSIS: A CAUSE OF FAILURE.

I am afraid that there still lingers in the mind of many surgeons the idea that a urinary case is necessarily a septic case. Sepsis in relation to enlarged prostate and prostatectomy is a failure of surgical methods and one that, I regret to say, appears to be widely accepted as inevitable.

I cannot agree with this view. It is possible to catheterise a patient or to manage a catheter retained in the urethra over a long period and keep the urine aseptic. It is possible to have the urine absolutely clear when the wound has closed after a prostatectomy. I do not say that it is easy to produce this result; it is not. But it is possible with extreme care in detail to achieve it in a large number of cases. There are, of course, degrees in sepsis. When I started urinary work every bladder wound in hospital was encrusted with phosphates, and the skin surrounding the wound inflamed and ulcerated by the alkaline decomposing urine. This condition is not seen at the present day, but the urine in prostatectomy is almost invariably infected, and septic complications are very frequent. The commoner septic complications are cystitis, epididymitis, seminal vesiculitis, pyelitis, and pyelonephritis.

Infection may occur before the patient suffering from enlargement of the prostate comes to the surgeon, it may be introduced at the time of the operation, or it may occur subsequent to the operation when the cystotomy wound is still open. The number of cases of enlarged prostate that come to me with the bladder infected by the catheter is much smaller than it was 10 or 15 years ago, and is steadily diminishing, but they still amount to 44 per cent. of private cases and 53 per cent. of hospital cases.

If the infection is moderate, and there is no evidence of pyelonephritis, a few weeks' preparation by thorough bladder-washing, either with intermittent catheterisation or with the retained catheter, together with diuresis and urinary antiseptics, will suffice as preparation for the operation. Where a more severe grade of sepsis is present it will be necessary to perform suprapubic cystotomy and drain the bladder. The immediate effect of cystotomy is a depression of the renal function and a consequent rise in the blood-urea. If the patient recovers from this the question of removing the prostate will arise at a varying interval. This is prostatectomy in two stages. It is not possible to discuss the two-stage operation fully here, and I shall only deal with it in relation to sepsis.

In all cases of severe urinary sepsis that do not clear up rapidly with bladder-washing, or appear unsuitable for this method, I drain the bladder by cystotomy for the treatment of the infection before performing prostatectomy. The indwelling catheter provides insufficient drainage for a severe grade of cystitis. A self-retaining catheter in the suprapubic wound is also inadequate, and a tube of sufficient size to allow of free escape of mucus and pus must be used. Continuous irrigation through a catheter in the urethra and the suprapubic tube is the most effective method of treatment after the cystotomy.

The number of cases in which this is necessary is small at the present day. In 820 cases of prostatectomy performed up to the end of 1923, I performed a two-stage operation in 63, or 7·6 per cent. In the last 200 private cases there have only been 5 in which the operation was a two-stage prostatectomy, and in all of these the cystotomy was done for severe sepsis. In judging when these infected cases are fit for prostatectomy the urine and the general state of the patient may be sufficient. But where the infection has spread to the kidneys and has not completely cleared up, it is desirable to obtain further information.

The urea-concentration and blood-urea tests give information in regard to the renal function, and it may be assumed where these tests are satisfactory and the infection is moderate in degree that the prognosis for prostatectomy is good. Where a severe grade of sepsis is present, the question of resistance of the patient to the infection is an additional factor in prognosis. Recently MacAdam and Shiskin[2] have investigated the value of the cholesterol content of the blood as a measure of the resistance to infection possessed by the individual.

Cholesterol plays an undefined part in the process of immunity, stimulating, it is believed, the production of antibodies. Immunisation processes have been shown to be accompanied by a high cholesterol content of the blood; a low "blood cholesterol" in a case of acute or chronic retention due to prostatic enlargement is significant of a low capacity for antibody formation, and points to the case being a bad operative risk as regards prostatectomy. The combination of a high blood-urea and a low cholesterol content is very serious. Certain factors unconnected with renal suppuration, such as arterio-sclerosis, glycosuria, and malignant disease, produce a high blood cholesterol, and to some degree modify the value of this test.

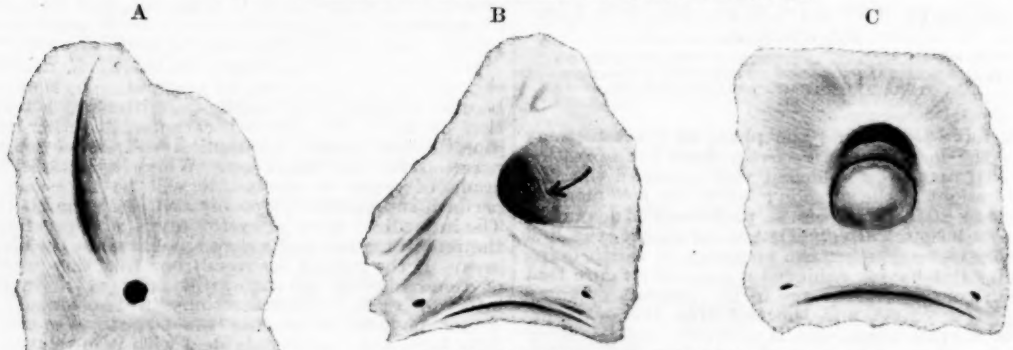
The normal average cholesterol content of the blood is 0·161 per cent. Below 0·130 per cent. is

[1] The mortality in 156 consecutive private cases was 4·4 per cent. The causes of death in 7 cases was pulmonary embolism 3 cases, acidosis 1, cerebral hæmorrhage four weeks after operation 1, diabetic coma 1, cerebral degeneration and circulatory failure 32 days after operation, 1.

[2] Brit. Jour. Surg., January, 1925, p. 435.

abnormal. MacAdam and Shiskin found that of 18 cases with blood cholesterol less than 0·130 per cent. 16 died of pyelonephritis and 2 recovered. My own experience is at present confined to 23 cases. In 6 of these, the blood cholesterol was below 0·130 per cent. One calculous pyonephrosis died without operation, and the others made a rapid recovery after operation. So far my cases have not been consistent, but the number is too small to draw any useful conclusions.

FIG. 1.—VARIETIES OF OBSTRUCTION AFTER PROSTATECTOMY.



A = Contracted internal meatus with ridge of fibrous tissue.
B = Internal meatus completely hidden by fold of mucous membrane.
C = Nodule of prostatic tissue and fibrous band at meatus.

Sources of Sepsis.

The causes of infection during and after the operation are numerous. In the blind operation a small incision which will admit the first and second fingers is made in the abdominal wall and bladder. In order to reach the prostate the abdominal wall must be forced down with the knuckles, and at the same time the forefinger of the left hand is introduced into the rectum and pushes up the prostate. The left hand is necessary for the rest of the operation, so it is either regloved or hurriedly washed and used inside the bladder. This proceeding is a source of infection of the bladder. In many of these cases there is a considerable amount of kneading of the rectal wall by the rectal finger, a process likely to promote the passage of bacteria into the blood stream, whence they will reach the urinary tract.

In order to avoid the rectal finger and the forcible pressure on the abdominal wall, I make an incision sufficiently long to allow the whole of the right hand to pass between the recti, the thumb remaining on the surface. The enucleating finger can now work without strain at the enucleation of the gland. It is difficult to understand why some surgeons fight shy of the extended incision. It makes the operation much easier, reduces the time and effort of the enucleation, and thus reduces shock. The wound, properly sutured, heals by first intention down to the tube, and is not the seat of hernia.

The next source of sepsis is the tags, shreds, and partly detached nodules of prostatic gland, capsule, urethra and mucosa that are left after enucleation of the prostate when the blind operation is performed. These shreds and nodules slough and form centres of sepsis, and a mass of slough encrusted with phosphates may be passed after the bladder has closed. The dissection of these shreds and nodules is simply and quickly done by the open method, and is an important means of preventing sepsis. The suprapubic tube used for drainage of the bladder does not adequately drain the prostatic cavity, and this cavity cannot be thoroughly washed out through it. Examination of the first urine passed by the patient shows one or two drachms of pure pus which have been lying in the prostatic cavity.

In order to wash out the prostatic cavity and prevent this accumulation, I tie a No. 10 silk Coudé catheter in the urethra, with the eye in the prostatic cavity. Daily irrigation and, if necessary, constant irrigation, is made through the catheter and up through the suprapubic tube. The catheter is removed on the seventh day, and at this time a considerable proportion of my cases commence to pass water, and in some the suprapubic wound is dry. This indwelling catheter is used to prevent sepsis and epididymitis.

D

D = Contracted meatus and ridge of fibrous tissue.

The most common method of introducing sepsis after the operation is in the dressing of the suprapubic wound. It is still a common method of treatment of the suprapubic wound to apply a dressing and voluminous layers of wool, and to change them after the dressings have become thoroughly soaked with urine. It is impossible to avoid infection of the bladder when this method is used. Urine is an excellent culture medium for bacteria, and the urine which soaks the dressings forms a direct communication between the skin of the abdominal wall, scrotum and perineum, and the bladder. Drainage by a rubber tube or Paul's colostomy tubing attached to the suprapubic tube will keep the wound dry, but the interval between the removal of the tube and the closure of the wound allows infection to enter. Immediate closure of the suprapubic wound and drainage by catheter in the urethra is too dangerous on account of hæmorrhage.

The method I have found most successful is the Hamilton Irving suprapubic box. This is fitted over the lower part of the wound, from which the tube projects. Inside the box is placed a gauze bag of large boric acid crystals which practically fills the box. The crystals are dissolved by the urine and form an antiseptic lotion. The upper part of the wound which lies outside the box is protected with some antiseptic ointment. Every day the box is removed, cleaned, and boiled, and the prostatic urethra and bladder are flushed with a large quantity

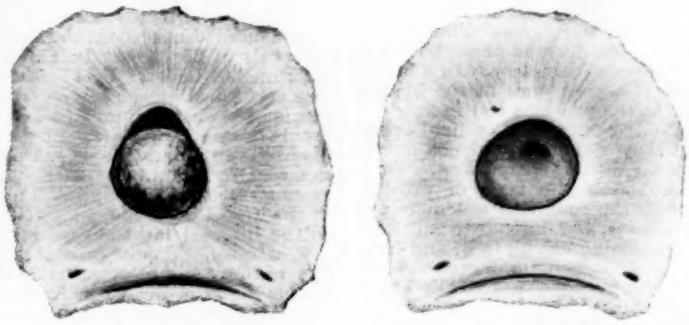
of silver nitrate solution. The boric acid crystals are renewed every 12 hours. If sepsis is already present continuous irrigation is carried on by attaching the tube of the reservoir to the catheter.

Epididymitis is the most frequent septic complication after prostatectomy, and the incidence of this complication has been the subject of a number of articles in the past few years. White[3] investigated 50 hospital cases and found the incidence was 82 per cent., and that in cases where there had been no previous infection the number amounted to 74 per cent., and in 33 per cent. the epididymitis was of a severe grade.

As a remedy for post-prostatectomy epididymitis French surgeons have for some years performed bilateral vasectomy as a routine practice after removing the prostate gland, and this has been adopted by some surgeons in this country. I have no fundamental objection to the method of bilateral vasectomy after prostatectomy. Many years ago I showed that the patient after prostatectomy is sexually sterile, although not impotent. The section of the vasa is, therefore, a matter of no consequence so far as the procreative power is concerned. But it appears to me to be a confession of failure on the part of the surgeon and, moreover, it is unnecessary.

It is possible, by attention to detail in the prevention and treatment of sepsis in relation to prostatectomy, to avoid, with only rare exceptions, this complication.

FIG. 2.—VARIETIES OF OBSTRUCTION AFTER PROSTATECTOMY.



A = Nodule of prostatic tissue occluding internal meatus.

B = Fibrous obstruction at lower part of prostatic bed.

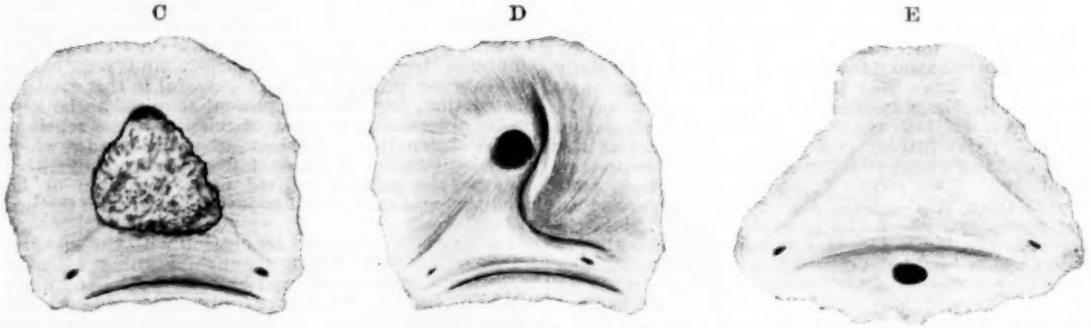
cent., the urine was absolutely clear when the suprapubic wound healed up. In the other cases, with a few exceptions, the urine was slightly cloudy, and in only a very few cases of pre-operation infection was the urine cloudy with a deposit of pus.

Seminal vesiculitis is another septic complication of prostatectomy. In cases of enlarged prostate, seriously infected before operation, it is one of the causes of persistence of urinary infection after drainage and energetic treatment of the sepsis has been carried out, or after the prostate has been removed. In a few cases I have seen pus welling from the seminal vesical at the operation of prostatectomy, and I have laid the vesicle open into the bladder. I have also found it necessary to remove the seminal vesicles in patients that have previously had the prostate removed, and suffer, after the operation, from persistent suppurative vesiculitis. But this appears too serious an addition to the operation to carry it out at the time of the prostatectomy.

OBSTRUCTION: A CAUSE OF FAILURE.

Obstruction after the operation of suprapubic prostatectomy for enlargement of the prostate varies from a slight difficulty in micturition to complete obstruction with suprapubic fistula.

In 69 cases of severe obstruction following pros-



C = Mass of granulation tissue occluding meatus.

D = Contracted meatus with fold of mucous membrane.

E = Complete occlusion of internal meatus with false opening behind trigone.

In 140 consecutive private patients where my notes were sufficiently detailed as to leave no doubt as to the matter, there were 9 cases in which epididymitis was noted (6·4 per cent.). In 5 of these cases the epididymitis was of a very mild grade, amounting to local tenderness and slight thickening, lasting a few days. In 8 of the cases the urine had been infected before operation, and in one case there had been an attack of epididymitis before operation. In 49 of the 140 cases the urine was infected before removal of the prostate, and no epididymitis followed the operation.

In a very considerable proportion of my cases of prostatectomy, amounting to not less than 25 per

tatectomy submitted to me for consultation, the conditions found were:—

1. Fibrous contraction, valvular folds or adenomatous nodules at the internal meatus or in the prostatic bed.

2. New growth in the wall of the prostatic bed: (*a*) Recurrence of simple enlargement of the prostate; (*b*) Malignant growth.

I shall discuss these causes of obstruction.

1. *Fibrous contraction at the seat of enucleation of the prostate.*—In 1921 I published[4] 16 cases of obstruction due to the formation of the fibrous tissue in the area from which the prostate had been removed. I have now seen 60 *cases of this condition.* In all

[3] H. P. Winsbury White: THE LANCET, 1922, i., 321.

[4] THE LANCET, 1921, i., 1008.

these cases the blind operation described by Freyer had been performed. It cannot be said that the post-operative obstruction in these cases was due to inexperience or lack of skill on the part of the operator. Of the 60 cases, 37 were operated on by general surgeons attached to hospitals, 20 by urologists, and 3 by general practitioners practising surgery. In all of these cases the degree of obstruction was severe. In 26 there was a suprapubic fistula that had persisted since the operation or appeared shortly after the wound had closed. In the other cases there was great difficulty in micturition. There were recurrent attacks relieved with great difficulty by catheter in some cases. Cystitis was present in most cases, but in a few the urine was clear. In addition to this obstruction there were stones in the bladder in 6 cases, and stones in the prostate bed in 2.

The type of prostate present at the original operation might be expected to have an influence on the development of post-operative obstruction. There was difficulty in discovering the type of prostate removed, but in 39 cases the condition was definitely stated. It was small, fibrous, and difficult to enucleate in 17, adherent and containing calculi in 3, and large and easily enucleated in 19. The number of the two main types of prostate was therefore practically equal. In all the cases the blind operation was performed and in 3 it was done in two stages.

In most of the cases trouble commenced during the convalescence from the operation. The passage of urine was delayed, the wound remained open for a prolonged period and then closed, or it closed and broke down again, or it remained closed and difficulty in micturition developed. Some patients passed no urine at all after the operation. In cases where the wound healed completely or the fistula only discharged occasionally, the symptoms were those of severe obstruction with occasional periods of complete retention. In such cases the patient was on catheter life, the catheter being passed with great difficulty.

ANATOMY OF PROSTATECTOMY OBSTRUCTION.

It is many years since I showed[5] that there are two danger points for the development of stricture after prostatectomy—namely, at the membranous urethra and at the outlet of the bladder where the mucous membrane is torn across. It is rare to find any contraction at the membranous urethra. In only 3 of the 69 cases was this the seat of obstruction. The reason for this immunity from contraction is, I believe, the fact that the urethra is torn across obliquely, the tear extending from the level of the verumontanum posteriorly to the membranous urethra anteriorly. The strip of mucous membrane that results from this oblique tear remains attached to the posterior wall of the prostatic bed. This strip prevents the formation of a circular ring of fibrous tissue which might develop if the mucous membrane were torn transversely. The point of narrowing in 59 out of 69 cases was at the prostatovesical opening. In three of these there was obstruction at the membranous urethra, and from fibrous tissue in the wall of the prostatic bed as well. The nature and degree of the obstruction varied. In 29 cases on which I operated there was fibrous contraction at the internal meatus in all cases. There was, in addition to this, a great variety of folds and flaps of mucous membrane (Fig. 1 B, C, Fig. 2 D), nodules of prostatic tissue (Fig. 1 C, Fig. 2 A) or of granulation tissue (Fig. 2 C), either overhanging the internal meatus or in the immediate neighbourhood of the outlet.

In several there was a hard fibrous ridge passing backwards or laterally from the site of the internal meatus across the base of the bladder. (Fig. 1 A, D.) The fibrous contraction formed a hard ring round the internal meatus, which was so narrowed as to admit a fine olivary bougie or a fine probe. In 5 cases the internal meatus was completely obliterated and covered with mucous membrane so that no trace of it could be discovered. In one of these cases a false passage had been tunnelled through the bladder base and opened into the bladder behind the trigone (Fig. 2 E), in another a false urethra tunnelled through the right lateral wall of the bladder.

[5] Brit. Med. Jour., 1905, ii., 1250.

Treatment of Post-prostatectomy Contraction.

The treatment of the post-operative obstruction carried out by the surgeon who performed the prostatectomy was ascertained in 58 cases.

In 5 cases there was no active treatment of the obstruction. Dilatation by the passage of sounds was commenced during convalescence and carried out at intervals in 25 cases. In 17 cases attempts to pass instruments failed. In 11 cases a second operation was performed by the surgeon with the object of overcoming the obstruction. In 7 of these the suprapubic fistula was enlarged, the finger introduced into the bladder, and sounds passed through the internal meatus followed by a retained catheter. In some of these cases the fistula healed, but the obstruction recurred, in the rest the fistula persisted and the contraction at the internal meatus recurred.

Treatment of post-prostatectomy obstruction of this nature may be transurethral by dilatation, with sounds or rupture with Kollman's dilator, cutting with Young's punch or a urethrotome, burning with high-frequency cautery, or by open operation.

The choice between these methods must depend partly upon the degree of obstruction as estimated by the ease or difficulty with which instruments can be passed into the bladder. In 18 of the 69 cases of post-prostatectomy obstruction (26·4 per cent.) that came under my care, I dilated the stricture and treated the cystitis. In 4 of these cases there were stones in the bladder, and after dilatation these were treated by litholapaxy. These were cases where I was able to pass instruments without extreme difficulty and without causing a serious reaction.

The point that struck me particularly about the cases where dilatation had already been carried out and failed was that the surgeon had either failed to realise the importance of sepsis in causing a relapse of the obstruction, or had been unable to cope with the infection. In the less severe grades of obstruction I chose dilatation rather as an experimental method of treatment, for it had already been tried and failed. I found that, when combined with very careful and thorough treatment of the sepsis and removal of stones when present, it was successful in this grade of obstruction, but that the patient required to be kept under observation in view of relapse of the sepsis or of the obstruction. In the more severe grades where I used dilatation it was not from choice, but either because the patient refused open operation or his condition was such as not to justify so severe a method of treatment.

In regard to treatment by cutting with the urethrotome, biting with Young's punch, burning with the high-frequency cautery, and bursting with Kollman's dilators, such methods are only applicable to the minor degrees of post-prostatectomy obstruction, for it is necessary that a large calibre instrument can be introduced through the contracted internal meatus. I personally prefer intermittent dilatation, combined with the retained catheter and thorough treatment of sepsis for this grade of obstruction.

In the more severe grades of obstruction these methods do not come into consideration, for the necessary instruments cannot be introduced into the bladder.

Operation for Post-prostatectomy Obstruction.

In 40 cases of obstruction after prostatectomy that were submitted to me, I recommended operation (57·9 per cent.), and in 29 of these I operated for the obstruction. The treatment previous to my examination in the 29 cases had been as follows:—

Dilatation	15
Attempted dilatation that failed	5
Transvesical operation	9

In 4 the transvesical operation had consisted in opening the bladder and making an attempt to dissect away the obstruction. As far as I could judge, these operations failed from not being sufficiently extensive to make a permanent cure.

FIG. 3.

Enucleated prostate (above) and cuff of prostatic tissue dissected after enucleation.

The operation that I performed on these 29 cases was as follows:—

1. All scar tissue in the abdominal wall was removed and the bladder separated from the abdominal wall.
2. The bladder was dissected from the posterior aspect of the pubic bones and was completely mobilised.
3. The fibrous ring was picked up in long forceps and cut backwards in the middle line and the scar tissue cut away round each side of the meatus, so that a free opening as large as the greatest expanse of the cavity was obtained. Where the meatus was obliterated a metal instrument was pushed up from the urethra and cut on from the bladder surface.
4. Dissection was if necessary carried into the prostatic bed, and layers of capsule and nodules of prostatic tissue removed.
5. The full Trendelenburg position, good self-retaining retractors, a head light, and long forceps and long curved scissors were required for this operation.
6. If sepsis was present a catheter was tied in the urethra and constant irrigation carried out for several days.

In all the 29 cases the operation was completely successful.

New Growth in the Wall of the Prostatic Bed.

I shall now discuss certain changes in the wall of the cavity left after enucleation of a simple enlargement of the prostate.

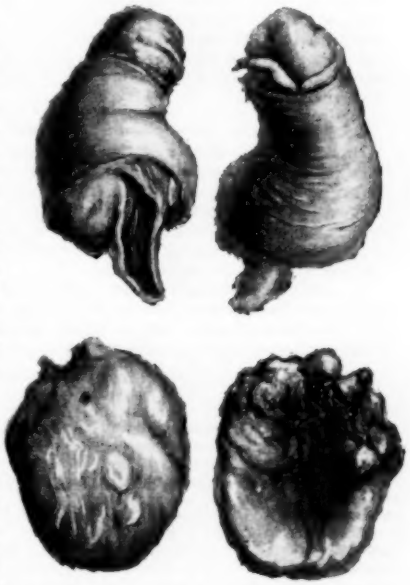
These are of two kinds: (*a*) recurrence of simple enlargement of the prostate; (*b*) malignant growth.

Before discussing these cases I must refer for a minute to the anatomy of the enlarged prostate, and draw attention to two points that were familiar in the discussions that took place on the subject over 20 years ago.

In simple enlargement of the prostate the changes take place for the most part in the neighbourhood of the urethra, and the outer part of the gland is expanded and compressed into fibromuscular layers, between which remains of the flattened gland tissue can be seen. These layers, demonstrated by Cuthbert Wallace in 1903,[6] form a thick capsule round the enlarged prostate. In enucleating the prostate a varying thickness of this capsule is removed.

In 1904 I pointed out[7] that the portion of the prostate that was enlarged was situated above the ejaculatory ducts and that the verumontanum and ejaculatory ducts with the posterior walls of the prostatic urethra below this usually remain intact. The part of the prostate below the ducts remains behind after enucleation.

FIG. 4.



Enucleated prostate apparently complete (above) with layer of malignant capsule dissected after enucleation.

In performing suprapubic prostatectomy it is sometimes possible to dissect out a cuff of fibromuscular tissue containing compressed gland tubules after enucleating an apparently perfect specimen of an enlarged prostate (Fig. 3). This cuff lies at the upper and posterior part of the wall of the prostatic bed.

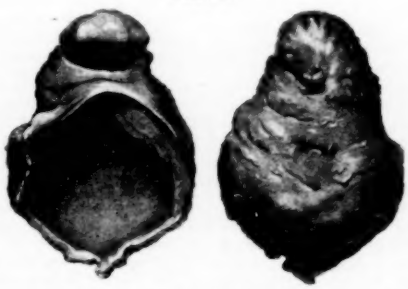
In these remains of the prostate that may be left behind after prostatectomy there are the nuclei from which further enlargement of the prostate may develop or malignant growth originate.

The following instructive case recently came under my observation:—

A. J. B., aged 61½ years, had suffered for some months from frequent micturition and dribbling. The bladder was distended. The prostate was enlarged, rather tough, and somewhat fixed, and I noted that I considered it malignant although it was not actually hard or nodular.

I operated in November, 1926. A round adenomatous nodule projected into the bladder and, to my surprise, a well-formed enlarged prostate with two lobes and an intravesical lobe shelled out easily in one piece. I was not satisfied, and examined the prostatic bed carefully and found a leathery capsule left behind. This I dissected out as a cuff (Fig. 4). Microscopical examination of the capsule showed that it was fibromuscular and showed gland alveoli. It was infiltrated throughout with carcinoma. The cancer cells were of small cuboidal type and arranged in alveolar masses sometimes showing a lumen. Section of the prostate showed that at the outer part only it was infiltrated in places with cancer cells.

FIG. 5.



Anterior (left) and posterior (right) views of prostate removed at second prostatectomy

Here the malignant growth had originated in the pathological capsule of a simple enlargement of the prostate and was spreading inwards towards the urethra.

[6] THE LANCET, 1903, ii., 1578.

[7] Medico-Chirurgical Transactions, 1904, lxxxvii., 403.

It is not possible here to discuss the whole question of the development of malignant growth in a simple enlargement of the prostate. This case illustrates one type of this form of growth.

I have met with a number of cases where the prostate had been removed, and it was stated that the gland had shelled out easily, and after an interval of one or several years obstruction recurred. On examination, there was a malignant infiltration of the upper part of the wall of the prostatic bed. These cases are, I think, similar to that I have just described.

Recurrence of the Simple Enlarged Prostate.

Incomplete removal of the enlarged prostate when only the intravesical projection of the prostate is removed or where only one lobe has been enucleated is occasionally met with, and is easily recognised. In these cases the patient is free from symptoms for a period and obstruction again develops. These cases require no further discussion.

A more important form of redevelopment of prostatic obstruction occurs when the enlarged prostate is reconstructed after what apparently was a complete enucleation. The following is such a case :—

J. C., aged 77, consulted me in 1916 on account of recurrent retention of urine. The prostate was much enlarged, elastic, and movable. I operated in May, 1916, and removed a large bilobed adenomatous prostate. He was well for nearly ten years, and then began to have difficulty and frequency of micturition which increased rapidly for three months. On rectal examination the prostate felt enlarged and similar to an ordinary enlargement of the prostate of moderate size. In August, 1926, I opened the bladder and found an adenomatous nodule projecting at the internal meatus. Partly by enucleation with the finger and partly by dissection I removed the nodule together with a complete ring of prostatic tissue. After removal the specimen resembled, from the posterior aspect, an ordinary enlargement of the prostate with an intravesical lobe (Fig. 5). From the anterior aspect the ring was complete only at the upper part, below this was an open trumpet-like tube with a smooth lining on the surface of which small openings of gland ducts could be detected.

Microscopical examination showed a fibromuscular stroma with prostatic gland acini of various sizes similar in appearance to an ordinary adenomatous prostate.

I have examined in consultation a number of cases where the prostate appears to have been reconstructed in similar fashion after enucleation of a complete specimen of enlarged prostate. The recurrent simple prostate undoubtedly takes origin in layers of the pathological capsule that have remained in the wall of the prostatic bed. A thick layer of this capsule is sometimes seen at the open operation and may be dissected without difficulty.

Time of Healing.

I have discussed the two chief causes that delay healing and give rise to a persistent suprapubic fistula. I will, in closing, refer more particularly to the time of healing of the suprapubic wound. It is, I am afraid, a state of perfection at present unattainable that the bladder should be completely closed by suture at the end of the operation of suprapubic prostatectomy. If this could be accomplished the danger of post-operative infection would be reduced to a minimum or entirely abolished.

Two important factors prevent the adoption of this method—namely, pre-operative infection and hæmorrhage. I look forward to the time when all operations on the prostate will be performed in an aseptic urinary tract and this objection would be eliminated. The danger of hæmorrhage in a closed bladder would, however, remain.

We must for the present, therefore, accept the necessity for draining the bladder until the danger of reactionary hæmorrhage is passed and, if the urine is already infected, until the infection has been cleared up or granulation established in the raw prostatic bed. It is another matter when this drainage becomes prolonged into a fistula.

In an excellent article on the closure of the suprapubic urinary fistula following prostatectomy, Winsbury White [*] records observations on 68 hospital cases. In these cases the average time in which micturition commenced was the nineteenth day. In 60 per cent. spontaneous micturition commenced on the twenty-first day. In 25 per cent. micturition was delayed until the fourth week. The earliest time of removal of the suprapubic drainage-tube was the seventh day. The cases in which the drainage-tube was retained until the tenth day had less temperature and healed more quickly, the average time of closure of the fistula being the twenty-first day as compared with the twenty-eighth day, when the tube was removed on the seventh day. Freyer held that patients who passed urine early in the convalescence often did badly.

I have collected the dates in regard to 200 of my own private cases where the operation and after-treatment was uniform. In all these cases a catheter was tied in the urethra, with the eye in the prostatic cavity at the time of the operation, and was retained for 7 days. A Hamilton Irving box was applied soon after the operation, and daily or constant continuous irrigation was made through the catheter. The tubes were removed on the fourth day and the catheter on the seventh day. The Hamilton Irving box was used until the wound was dry.

I have omitted from these figures 3 cases which were so unusual as to depart altogether from the routine of my practice. Two were cases of very severe sepsis where the bladder had been drained elsewhere, and I only did the second stage of the operation. The other patient was very ill with chronic retention and sepsis, and there was a prolonged interval between the two operations and a tedious convalescence. These 3 cases could not be regarded as representing the usual post-operative course. With these exceptions the cases are consecutive and the results for three years are as follows :—

		Day average.		Day average.
1924 ..	Urine passed ..	13·1	Wound dry ..	16·7
1925 ..	„ „ ..	12·1	„ „ ..	16·4
1926 ..	„ „ ..	10·1	„ „ ..	16·0

In 1926, but for one or two long cases, the average day on which the wound was dry would have been better, as is shown in the following percentages :—

In 1924 .. 48·4 }
„ 1925 .. 44·4 } per cent. were dry on or before the 15th day.
„ 1926 .. 57·1 }

Several patients passed urine when the catheter was removed on the seventh day, and were dry from that time.

[*] Brit. Jour. Surg., July, 1923, p. 173.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Arthur William Scott, of St. David's College, Lampeter, Cardiganshire, the testator left, among other bequests, £7000 to the University of Cambridge, the income to be applied for the furtherance of physical science in such manner as the authorities may determine; £1000 to the Royal Society, the income to be applied for the advancement of the physical sciences as the president and council shall determine; £1000 to King Edward's Hospital Fund for London; £500 to the Royal National Lifeboat Institution. The residue of the property as to one-third to the University of Cambridge, the income therefrom to be applied for the furtherance of physical science, one-third to the University of Oxford for like purposes, and one-third to St. Thomas's Hospital, London. —Mr. Henry Swain Bennett, of Holmewood, Kirby Muxloe, Leicestershire, who left £149,941, directed that after certain provisions the remainder of his property is to be divided between the Leicester Royal Infirmary and the Leicester, Leicestershire, and Rutland College, then on the death of a beneficiary he gives £5000 to the said college, £5000 to the Leicester Royal Infirmary, and certain other bequests, including £500 each to the Leicester Guild of Cripples, Leicester and Leicestershire Maternity Hospital, Leicester Charity Organisation Society, Leicester District Nursing Association, the Institution for the Blind, and the Leamington Home for Incurables.—Mr. Douglas Douglas-Crawford, F.R.C.S., of Rodney-street, Liverpool, bequeathed £1000 to the Liverpool Royal Southern Hospital after his wife's death.

A NOTE ON THE PREPARATION AND PROPERTIES OF THE OVARIAN HORMONE IN A WATER-SOLUBLE FORM.

BY F. DICKENS, M.A. CAMB., PH.D.,
E. C. DODDS, M.D., PH.D., M.R.C.P. LOND.,
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(From the Biochemical Department, Middlesex Hospital.)

UP to the present time the ovarian hormone has in the main only been obtained in the form of an oil insoluble in water, but soluble in organic solvents such as acetone, ether, and alcohol.

The original preparations of Herrmann and Fränkel [1] and those of Allen, Doisy, and their co-workers [2] have been completely insoluble in water. In a communication from these laboratories (Dickens, Dodds, and Wright [3]) the work of these observers was repeated, confirmed, and extended, and since that time various clinical trials of material obtained by these processes have been made. A great difficulty has, however, been experienced owing to the fact that the material can only be administered either in the form of an oily solution or as an emulsion in some solution such as dilute aqueous sodium bicarbonate. If the former be employed it is found that prolonged administration in large doses often leads to the development of hard, painful nodes under the skin, and also the absorption of the material is very slow.

The second type of preparation—namely, bicarbonate emulsion—is unsuitable for general clinical work owing to the fact that the material tends to settle out in a coagulated form, with the result that even prolonged shaking does not succeed in producing a uniform emulsion.

It was felt, therefore, that before any extensive clinical trials could be made with this material, the method of extraction would have to be so modified as to yield a product which would either be soluble in water or which would be absorbed much more readily than the older one referred to above.

There have been many attempts in the past to prepare this œstrus-producing hormone in a water-soluble form, and amongst the most prominent of the published names are those of Zondek and Ascheim,[4] and of Laqueur, de Jongh, Hart, and Wijsenbeek.[5] In our hands, however, these methods have proved to be unsatisfactory, and on repeating the experiments of these authors we have not succeeded in obtaining the hormone in a water-soluble form. The oily material of the original process of Herrmann and Fränkel was treated in a variety of ways in the hope of rendering the active portion soluble in water. Thus mild acid and alkaline hydrolysis were tried without success, and even saponification with sodium ethoxide in an atmosphere of nitrogen was found to destroy the potency slowly without liberating any active water-soluble material.

It appeared, therefore, that some entirely new method of extraction would have to be evolved before the desired result could be effected.

During the course of this work some experiments which had been performed in these laboratories on an entirely different subject yielded some very valuable suggestions. A series of extractions of the suprarenal gland was being performed in the hope of obtaining a substance that would benefit cases of Addison's disease. In one investigation a quantity of suprarenal glands was extracted with alcohol in the manner described by Herrmann and Fränkel and Allen and Doisy for the preparation of the ovarian hormone. In fact, this technique was followed in closest detail, and the final product was a clear oil completely soluble in ether, acetone, alcohol, and other organic solvents. The product was exactly similar to ovarian hormone in physical properties. Bicarbonate emulsions of this material were found to be very strongly pressor in action when injected into cats arranged in the usual manner for recording blood pressure upon a kymograph, and it was subsequently found that this effect was due to adrenalin held in solution in this oily material. It was naturally very surprising to find adrenalin present in a mixture which was completely soluble in ether, and one was tempted to think that if the original investigators had used this method of extraction instead of an aqueous one it would have been quite possible that this substance might have been regarded as being of a fatty nature, as many workers have regarded the ovarian hormone. We therefore decided to employ an entirely new method of extraction, and the first one tried was the acetone picric acid process which has been used by us for the preparation of insulin (Dodds and Dickens [6]). We obtained from ovaries by this process a small quantity of water-soluble hydrochloride which produced œstrus when injected into castrated animals. The method of extraction was complicated by the fatty nature of the tissue, and for subsequent experiments we employed placentas exclusively.

Details of Experiments.

The following experimental details show that it is possible to obtain by the acetone picric acid process, and by modifications of it, the ovarian hormone in the form of a water-soluble hydrochloride. The yields obtained by this process, however, were very small, as will be seen from the experiment quoted below.

Minced pigs' ovaries were mixed with dry picric acid and extracted with 70 per cent. acetone. The acetone was removed by vacuum distillation, and the dry picrate obtained on filtering the aqueous residue was extracted with acid alcohol. On adding 15 volumes of acetone to this extract a precipitate formed, which, when well washed with ether and dried in vacuo, proved to be very soluble in water and to produce œstrus in ovariectomised rats in doses of 10 mg. The yields obtained by this method were of the order of 40 rat units per kg. On applying the above method to placenta, yields of over 90 units per kg. were obtained, the weight of one rat unit being 4·5 mg.

A long series of experiments was then conducted on the acid extraction of placenta. A typical experiment may be quoted as follows. 1400 g. of finely minced placenta were mixed with an equal weight of 7 per cent. hydrochloric acid and heated on a steam bath for five hours with frequent agitation. The pH was then adjusted to 3 and the mixture passed through a Sharple's centrifuge. On adding an equal volume of saturated aqueous picric acid a heavy precipitate was obtained which was filtered off on a Buchner funnel and extracted with acid alcohol (absolute alcohol 75 per cent., 3 N.HCl 25 per cent.). The extract was treated with 15 volumes of acetone and the hydrochloride thus obtained well washed with ether and dried in vacuo. The yield in this experiment was 6·11 g., and this was found to be strongly active in 2·5 mg. doses (=1600 rat units per kg.).

Subsequent experiments show that still larger yields may be obtained by variation of the hydrogen-ion concentration to which the extract is adjusted before filtration. Active material may also be obtained by iso-electric precipitation. These points are under investigation.

The product so obtained is a pure white powder very soluble in water. It can be boiled in aqueous solution for a considerable period without loss of activity. The active principle passes completely through a collodion membrane, and the substance may be purified to some extent by this means. On extracting material active in 5 mg. doses with hot butyl alcohol, the filtered extract yields a product the rat unit of which is 0·5 mg.

The chemical constitution is being investigated. The substance appears to be relatively simple and contains a fairly large proportion of sulphur. The

Pauly reaction for histidine is strongly positive. Tryptophane also appears to be present.

Standardisation of the products described above was carried out upon young rats of uniform weight. they were ovariectomised, and swabs were taken daily for seven days, or until seven consecutive smears typical of di-œstrus were obtained. The animals were then divided into batches of six and varying doses were given to each batch. The unit was taken as the smallest dose producing cornification within 48 hours in a batch of six rats. This work was carried out by Dr. J. Lee Warner, who also introduced an additional check by mating the injected females and noticing the presence of vaginal plugs. He was successful in obtaining plugs with this new water-soluble material, but found that a greater dose was required to produce mating than to evoke œstrus. This problem will be the subject of a separate communication.

Summary.

A method is described for obtaining the œstrus-producing hormone in a water-soluble form by extraction from placenta, the yield being over 1000 rat units per kg. The activity of the preparation can be easily reduced to below 0·5 mg. per rat unit. Further work indicates that this degree of purity may be exceeded without much difficulty. The properties of the new extract are discussed.

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THE PSYCHOLOGICAL TREATMENT OF MANIA AND DEPRESSION.

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OF late years the treatment of certain cases of mental disorder without certification has become a practice amongst psychologists and the more advanced medical practitioners. Cases of mental disturbance which would have been certified without hesitation only a few years ago are now recognised as being capable of treatment in their own homes or in an ordinary nursing home.

The advantage of this to the patient is very great, so great that the physician is justified in taking a certain amount of risk in following this line of treatment so long as he is doing so with the coöperation of the patient's relatives. It is important to realise that a patient need not of necessity be certified because he is certifiable.

It is a fact that a great many cases of insanity can be prevented if they can be properly dealt with before the condition has completely developed. Certification is a very serious matter for anyone. The time will, no doubt, arrive when treatment in an asylum will lose the terror that is at present attached to it, but certification now means to the ordinary individual the giving up of the struggle, that from fighting his condition he is reduced to helplessness, that he has reached the lowest levels of mental capacity, and that his failure to overcome his illness is complete. From this state the re-education process is slow and difficult, and the fact of certification leaves behind it a feeling of insecurity which must take many years for its removal, if indeed it ever disappears.

To the ordinary individual the segregation of the insane patient is so absolute, he is cut off from his fellow men, and his life as a member of his community ceases. It is for this reason that the lot of anyone recently discharged from an asylum is so hard. He is returning to live in a tribe which has once turned him out. Before he is readmitted to the life of the tribe everyone around him must be convinced that the condition which made his exclusion necessary will not return. This state of affairs renders his return to ordinary circumstances more difficult, and produces in him a state of apprehension inimical to recovery. It is the intention of this paper to consider two of the milder forms of psychosis and to show how these may be foreseen and prevented.

The emotional states such as fear, sex, and anger are preparations for physical activity. The natural result of the presence of something dangerous in our environment is that we should run away, and the condition that we recognise as fear is a preparation in the body to enable that escape to be effected. Similarly, anything that threatens to injure some person or thing that we would naturally protect arouses us to a condition of body which we recognise in ourselves as anger. These emotional states are, therefore, physical, and they are permitted a certain amount of expression in a civilised community, although they are not allowed to attain complete satisfaction. Rage, for example, is discouraged and punished because of its danger to others, while anger, which is a controlled rage, is tolerated.

Physical exercise assists in providing an outlet for the forbidden activity, while relief can sometimes be obtained by substituting one emotion for another. For example, a soldier in the trenches who is afraid of the shells that threaten him and who cannot run away can attain some degree of relief by the physical activity of digging, or if this is denied him, by shouting or using bad language, or by some expression of anger. In this last case an emotion (panic) which is not allowed by civilisation is expressed through the channel of an emotion (anger), of which civilisation is tolerant. In this example it will be seen that there is something to express which needs an actual physical activity to express it.

These activities are, for the most part, concerned with the motor functions of the body. The digestive functions, and those functions which are associated with digestion, are left unstimulated and tend to stop, so that a stasis of the intestine occurs and a lowering of the activity of the liver. These two changes have been mentioned as examples and to indicate the nature of the physical disturbance which is occurring. If these changes happen frequently, the result will be an habitual stasis of the intestine, an increase of the dangerous intestinal flora, and an absorption of toxins which will increase the depression and so give rise to a vicious circle. The commonest emotion and the one most likely, apart from the frequency of its occurrence, to bring about this state of affairs will be the emotion of fear. It must be remembered that fear may be aroused by actual danger, by the recall of a terrifying memory, either consciously or in the form of a phobia, or by a purely imaginative process in which the patient pictures himself or someone belonging to him in a position of danger.

It will presently be shown that the two conditions of depression and excitement are closely allied. The chief difference between them seems to be that the depression state is the result of failure to secure any outlet for the physical activity which results from an emotional response, while the state of restlessness is an expression of that activity, not necessarily directed towards the object for which it was aroused, but possibly spread over all the events of the patient's life. The cause of the condition is the same in both cases, being the control that is exercised by civilisation in preventing the expression of natural desires. This control has also this effect, that it prevents the recognition by the patient in a great number of

these cases of the actual desire which is being stimulated, and so denies to him the opportunity of dealing with the difficulty for himself in a logical manner.

MANIA.

Where the conditions of the patient's life are such as to produce a constant stimulus of one or other of these emotions there will result an activity in excess of the normal needs of the individual and the consequent development of restlessness, excitability, and mania.

Restlessness is an extremely common symptom in conditions of anxiety, and it is very frequently present in states of depression. Patients rarely complain of this symptom alone, but the fact that it exists is evidence of the presence of a stimulus of some kind strong enough to arouse activity in the motor mechanism. A characteristic of it is that it leads the patient to expend more physical energy in the carrying out of any activity than the task demands or than would be needed by others for its performance. Excitability is only a further degree of the same condition, except that the energy is always present, ready to be fired off at the slightest stimulus, and usually resulting in an expression of anger in circumstances where the ordinary healthy individual would exercise control, anger being, as stated above, the emotional activity of which civilisation is most tolerant. Mania is a condition in which control is largely in abeyance. In this condition the violence is expressed without any apparent outside stimulus whatever, and is often directed aimlessly upon animate or inanimate objects indiscriminately. It will be of value to consider the bodily mechanism which underlies all this activity.

In considering the activity of the excitement state we must realise that, apart from those functions which are directly or indirectly concerned with digestion or excretion, the whole body is involved, and it is obvious that there must be some mechanism at work more potent than that which is ordinarily employed in everyday life. The activity is so persistent, so untiring, and in the acute condition of mania so violent, that it may go on to complete exhaustion and death. This degree of activity could only be attained for a very short space of time if conscious effort were the only stimulus being employed. It appears that the glands of internal secretion play a large part in this mechanism, and that the gland which is chiefly concerned is the parathyroid. This gland is said to be stimulated by the products of muscular activity circulating in the blood stream. The parathyroid secretion produces an over-excitability in the brain-cells leading to a greater activity or preparedness for activity in the motor cortex. This in turn produces a condition for which muscular activity is the only relief, and leads to the development of a vicious circle.

Some such cycle as this would account for the restlessness in people who feel that they must constantly be doing something without pause, resting only when they are asleep, and achieving the state of sleep only with difficulty. This mechanism would account also for the phenomenon which has been observed by everybody—namely, the occurrence of sleeplessness at the end of a day when the muscles have been used more than usual and when the individual himself is actually very tired. In the excitement state sleeplessness is a very common symptom, and the distress caused even in the milder forms of this condition by the experience of night after night of wakefulness is very great, and is one of the most important of the symptoms against which treatment must be directed. In such cases rest in bed must be enforced until the vicious circle is broken, and the best sleeping draughts are those which act as depressants to the activity of the motor cortex.

The following case illustrates the condition which has just been described.

A man, aged 35, manager of a large factory, complained of restlessness with attacks of extreme excitability, amounting at times almost to maniacal outbursts. These were largely directed against his wife of whom he was very fond. He was restless at the office, making work for himself when he might have remained unoccupied, he was restless in his amusements, only enjoying golf or bridge if there were high stakes to make the game exciting. Between two rounds of golf he would hardly wait to finish his lunch before he was worrying his friends to start out again. He slept poorly. The condition threatened his home life and made him acutely miserable. He realised that these outbursts of excitement were unreasonable, and yet he was unable to prevent them, so that he was frequently morose and depressed. He believed that he would become insane and he feared that he might injure his wife in one of these excitement states.

His family history was of importance. His mother had deserted his father when the patient was only 5 years old, and the patient and his brother had been brought up by foster parents who were not particularly kind to them. At the age of 14 the only kindness that the patient had received had been from his father's solicitor, who managed their affairs, and from this man's wife. His father, who was an invalid, played a very small part in the patient's life and he saw him very little.

The patient went to school in Ireland and was a keen Rugby football player. At the age of 19 he believed himself to be in love with his guardian's sister who was 14 years his senior. At that age he went to South America, where he was extraordinarily successful, and at the age of 23 he returned to England to join the army. He had considerable experience as an infantry officer, and then transferred to the R.A.F., where he took a pilot's certificate. He then developed attacks of asthma and was eventually invalided out of the army. When he was 26 he married his guardian's sister who was then 10 years old. He realised that it was taking a definite risk for anyone of his age to marry someone so much his senior, but he felt compelled to take the step. Soon after this he obtained his present employment as manager of some works abroad, where he was brilliantly successful.

He found that his wife, who had achieved considerable social popularity in the place where she lived, was one of those people whose chief object in life is to be a social success, and he conceived the idea that she was neglecting him in order to please other people. This habit of hers was a constant source of grievance to him, and was the invariable cause of their quarrels. She was quite unable to change her life-long habit, while he began to see neglect of himself in her most trivial actions. He was obsessed with the idea that she must think of him first in everything; in fact, he behaved just as a spoilt child would do.

The examination of his mind made it clear that he was looking upon his wife as if she were his mother and demanding of her a complete absorption in his affairs. This attention she was either unable or unwilling to give, with the result that the patient developed the excitement symptom which was a manifestation of the energy which he might have used in primitive circumstances to insist upon her compliance with his wishes, but which his civilised mind endeavoured to keep under control. This energy was expressed in the excitement condition in which he lived, his energy begetting more energy in the manner that has been described above.

The *treatment* can be briefly described. He was put to bed in a nursing home and given sedative drugs, with the idea of bringing the energy under control and breaking the vicious circle. The whole circumstances of his case were explained carefully both to the patient and to his wife, so that they were both completely aware of the situation. With this understanding the patient's fear of himself diminished, while his wife realised how little was necessary on her part to put their whole married life on a right footing.

A second case will further illustrate this condition.

The patient was a sister in charge of a ward in a large London hospital. Her history showed that she had been brought up very strictly. She was engaged at 23 to marry a man considerably older than herself, but he died shortly afterwards, and her sex during this engagement had not been consciously aroused. Her first knowledge of anything to do with sexual matters was from the lectures on venereal diseases, which was part of her nursing training. The patient felt relieved that she had not married and she developed a horror of anything to do with sex.

For two years previous to the onset of her illness the patient had been in a low state of health associated with a gradual impairment of her sight. Her character about this time was said to have changed. From being contented and good-tempered she became irritable, and in the last six months previous to her breakdown she became rapidly more restless. The onset of the condition was sudden with restless wanderings and incoherence.

The patient was put to bed in a nursing home, under the constant supervision of day and night nurses. She was completely disoriented and dissociated; there were constant restless movements, a plaintive voice and a childish attitude.

If she was left unattended she would get out of bed and run from the room. When spoken to firmly she would answer questions coherently for a moment or two, and then return to her dissociated state. She was very exhausted by the persistence of the restless movements, which were only controlled by strong hypnotics, and she explained in a lucid moment that "it was more comfortable to keep moving than to lie still." (This statement by the patient is evidence that there is stimulation of the muscles through the motor cortex in such cases.) She was obviously in a state of terror. It was presently noticed that, although she occasionally spoke of suicide to the nurses, she always ran away from the open windows. These were consequently closed and screwed down and very shortly afterwards the patient became more composed and made no more attempts to run from the room. It was then possible to examine her mind more closely.

The patient was able to explain that for six months she had had occasional attacks of dissociation, and that she had had hallucinations of hearing. She heard sexual suggestions which were to her intolerable, and on several occasions she heard voices instructing her to take poisons from the poison cupboard which was in her charge. She had found herself standing in front of the open poison cupboard without any idea as to how or why she had gone there. She had been unwise enough not to consult anybody about it because she knew that she would have to give up her work if she did so. The sexual hallucinations were in relation to a member of the staff of the hospital, whose attitude towards her had always been entirely professional, and to whom she had shown not the slightest sign of any such interest. This is interesting as showing the development of the hallucinatory process. Her repression of sex was so complete that she was apparently ignorant of sexual matters, and it was only in the form of an hallucination that her normal sexual wishes were able to gain expression, and this only by causing a complete breakdown of her ordinary conscious control and by producing a dissociation state. It seems not improbable that the idea of suicide arose in consequence of the absence of response to her subconscious wishes from the man towards whom they were directed.

Her recovery began with the dislike of surveillance, and this was gradually relaxed. A slow change came over her personality during the first two days of the period during which she was returning to a normal condition, and she was weak and ill and depressed after this recovery. The final recovery of her normal personality took ten days, and there was a complete amnesia for the whole period of her acute attack. She did not then know the people who were surrounding her and expressed surprise at their friendliness and kindness.

The period of her amnesia was then very cautiously recalled to consciousness, and she began to see without any outside suggestion that sexual wishes had been the cause of her dissociation, an idea which distressed her very much, and she recognised at the same time the true nature of the hallucinations.

She was very restless and very conscious of her body. This was controlled to some extent by means of luminal and medinal, while a mixture containing salix negra helped considerably to relieve the restlessness. There was this change in her personality: whereas she had been completely unselfconscious she was now shy and selfconscious. She was persuaded to re-educate herself to these new circumstances, and she slowly succeeded in this endeavour, so that when seen three months later she was quiet and fairly well. It was not until some eighteen months later that she was able to live anything like a normal energetic life again or to take up her life as a nurse once more.

DEPRESSION.

In some of these conditions the object for which the energy is aroused can be recognised and the energy liberated. If a man is frightened he can run away. By taking this natural course he uses up the energy that has been aroused, and his excited physical state is relieved. If, however, there occurs a constant stimulus to one or other of the emotions, and the complete expression of the emotion is denied, the excitement state gives rise to symptoms. It is necessary now to consider those cases in which the energy can have no outlet, where there is no possibility of its being utilised, either because of the conditions in which the stimulus occurs, or because the stimulus is so opposed to the social ideal that it cannot be recognised. This condition is probably the commonest cause of depression and melancholia, and explains the reason why physical lethargy and helplessness, a form in fact of paralysis of the whole system, is so commonly associated with depression, and so often forms the most important symptom in melancholia.

The circumstances leading up to this condition can best be illustrated by an example: a wild bird if it is held in the hand will struggle to escape. This struggle is the undirected activity of the instinct of self-preservation, and if the bird is released at this moment it will fly away more rapidly and to a greater distance than it would do in any other circumstances. If, however, the bird is held so securely that escape is impossible, after a few futile efforts to escape it will lie still in the hand. A new phase in the struggle has now been reached. Just as the effort to escape is the result of the stimulus to the instinct of self-preservation and is automatic, the panic being stronger than the capacity for control, so, this stillness which succeeds it is an automatic process. It occurs in all probability in order that the bird shall be prevented from destroying itself by its own attempts to escape, and is, therefore, not the result of reasoning. The bird does not say to itself, "now I will lie still until a way of escape appears." It lies still because the "activity panic" has given place to a "stillness panic," which is equally an emotion, but which is associated with an inability to move. If now the bird is freed, there is an appreciable interval between the time that it is free, and feels itself to be free, and the moment that it can summon sufficient energy to fly away. This shows that the inertness which developed to prevent useless activity lasts beyond the need for it, and has a tendency to prevent the reappearance of the normal activity when the way for escape lies open. Instances such as this in the animal kingdom can be multiplied to almost any extent.

If the same circumstances affecting the human animal are observed a similar condition of affairs will be noticed. Fear, in man, the result of the stimulus to the self-preservation instinct, is normally followed by running and a search for somewhere that is safe. If, however, the stimulus persists over a longer period, and the conditions are such that there is no escape and no possibility of escape, then the physical state becomes one of stillness and inertness similar to that shown by the bird when it is closely held in the hand.

It may be that in primitive circumstances this stillness would be imposed upon us in order to assist us to escape observation. We observe it in ourselves when we are awakened from a deep sleep, at night, by something unusual that has occurred. We lie rigid, with the heart beating rapidly and the breathing diminished and shallow. This rigidity is automatic. The soldier in the trenches, who is terrified by shell-fire and cannot escape, will collapse into a semi-conscious state in which he cannot walk unaided. He will not speak nor be persuaded to eat or drink, and he may remain in this condition for hours or days.

The foregoing is a description of an acute condition of helplessness, a condition aroused by something actually alarming which occurs in our environment, but we are more concerned here with the chronic form of this acute condition. If a means of escape is provided for panic, the violent activity of running is observed, whilst anxiety can be looked upon as chronic fear, and is associated with over-activity of the muscles and restlessness. In a like manner the chronic state of the "stillness" reaction is associated with an inertness and incapacity for exertion of any kind. It must be looked upon as a reversal of the ordinary activity which follows the stimulus of an instinct, and the same rules will apply when the emotion that is aroused is sex or anger. Examples of this reaction occurring in every-day life are not difficult to find.

The patient is afraid of an illness, say, for example, of cancer, or, what is perhaps still more terrifying, of insanity, due to an inability to understand his physical or mental symptoms. There is no escape, he cannot run away from himself, and because there is no escape, inertness, helplessness, and grief replace muscular activity, restlessness, and excitement. In the case of the young girl jilted by her lover, her sex is prevented from achieving the end for which it

was aroused, and there is no escape from the situation. The excitement and happiness of courtship is replaced by the inertness and helplessness of grief.

With these examples before us it is easy to understand the symptoms of depression and of melancholia. The muscle weakness is accompanied first by a disinclination to activity and finally by an inability to move, and when the patient has reached this stage no stimuli are of any avail, because it is not a question of "will not" move, but of "cannot" move. The last state of the illness is shown by the melancholic who sits "in a heap" all day long, resenting the approach of any one for fear he should be called upon to make some effort of which he is physically incapable.

A disturbance of the digestion follows. The appetite goes and food is refused, and finally all attempts at persuasion are resisted and forcible feeding has to be resorted to in order that the patient may be kept alive. Although it must be recognised that this feeding is necessary in some cases, it should be remembered that the condition is first of all developed at a time when the patient is unable to utilise the food that he forces himself to take.

Every function of the body becomes lowered in the same way as those which have been used as examples, so that depression, and to a greater degree melancholia, are found to be associated with a lowered activity of endocrine glands, and, in consequence, with a lowered bodily temperature and a feeling of misery. Finally, because the general condition is working at such a low level, there results a greater liability to certain diseases and a lessened capacity to resist them.

These considerations of the causes that lead to depression and melancholia give us the clue to their treatment. In examining such a patient we will find that there has occurred in his life some circumstance which has prevented the normal expression of one or other of his emotions, and it is necessary, if he is to be saved from the development of the depression state, that this circumstance should be recognised. The cause of the condition should be explained to the patient, who is probably unaware of it, and, if possible, his circumstance should be changed in order that the emotional stimuli shall be prevented or that the emotional responses may be given some outlet. This will help to check the onset of the helplessness, and will enable the rehabilitating natural activity to reassert itself.

It is obvious that this work must be done in an earlier stage than the stage of melancholia. The melancholic can give us no information, he resents our presence and our interference, because it is usually the precursor to some demand that he shall make some effort, and he feels incapable of making any effort.

The above description of depression and melancholia rather emphasises the physical elements in the condition, and it is important to bear in mind that these states are physical, that the depression state that appears in the syndrome as a mental symptom arises from the physical condition of helplessness which is a direct and automatic result of the inability of some conscious or subconscious wish to gain expression.

PHYSICAL AND PSYCHOLOGICAL TREATMENT.

The correct treatment of the patient from the physical point of view is of very great importance. The conditions here described, and particularly the state of depression, have the effect of interfering with the general metabolism of the body. The digestion is slow and incomplete and there is, in consequence, increased infection in the intestine, largely the result of an increase of the *Streptococcus salivarius*. Substances of a toxic nature, the elimination of which is difficult, circulate in the blood stream, and there is sometimes a peculiar odour about these patients which probably emanates from this source.

Apart, therefore, from the treatment of the patient in bed and in one room, attention must be given to diet and elimination. High colon wash-outs should be practised every day, and large amounts of bland fluids should be taken in order to assist in the elimination of toxins. Lemon water, barley water and magnesia drinks should be given as much as the patient can stand. Baths are of value, particularly in the states of restlessness and mania. Where the restlessness is extreme a prolonged tepid bath each day will often have more effect in soothing the patient than the exhibition of any drug.

The essential factor in the psychological treatment of these cases is that they shall be under close observation, and that circumstances shall allow of a prolonged visit from the psychologist every day. It is only by sitting down with the patient and watching him very carefully that any control can be brought to bear upon him. No matter how dissociated the patient appears to be, it is usually possible for the influence of the presence of the physician to arouse whatever is left of the patient's reasoning capacity. It gives the patient something to hold on by. Every effort should be made to produce in the patient a feeling of security. He must be made to feel that those around him are endeavouring to help him and that they have a belief in his recovery. If the patient is able to attain this feeling of comfort and support he is more likely to be communicative, and as his recovery proceeds he is better able to accept the assurance of the physician as to his condition.

The psychological examination of the patient should not be attempted until his confidence has been won and until this feeling of security has been attained. Apart from this, he must have reached a state of physical health approximating to normal. Attempts to press this examination forward too rapidly are likely to end in increasing the strain from which the patient already suffers. The point at which the patient reaches this stage in his recovery is a matter for experience and gentle trial to decide. Sometimes it will be found that the first recall of the patient's circumstances after he has been separated from them for some time will result in a recurrence of his symptoms, and if this should happen the mental examination must be postponed and a further trial attempted when the patient is stronger. Treatment away from the surroundings that have given rise to the condition may prove to be all that is necessary to restore the patient to health, but unless some adjustment has occurred during the patient's absence from these surroundings, which relieves him from the strain that has caused the condition, the cure is never permanent. It is for this reason that the psychological examination must be carried out, the cause of the illness explained to the patient, and the circumstances altered if possible.

A case will illustrate this.

A married woman, aged 47, complained of inability to concentrate, forgetfulness, depression, and irritability with restlessness. She was intensely self-depreciative and felt that she was a burden to her husband and children, and on several occasions she had wandered away from home in a vague manner, while she constantly dwelt upon the idea of suicide. She avoided meeting people, became unable to manage her home, and was inclined to avoid her husband and children, of whom she was very fond.

Her history showed that she had been a nervous girl, and that before her marriage she had been daily to business in London. She married a man who had been educated at Oxford, and whose people were of importance in the locality where they lived. She got on badly with her husband's mother, who no doubt was at no pains to hide her feeling that her son had married beneath him. Her children were growing up, the daughter was going to a finishing school abroad, and the son to a public school, so that during the period immediately preceding her illness she had been left with very much time on her hands. Her husband had for a great many years taken a very keen interest in amateur theatricals, and was away from home at night. This had all tended to throw the patient upon her own resources, and she had not been sufficiently well educated to know how to make use of her leisure.

Careful examination revealed that she had through the whole of her married life felt herself to be inferior to her husband, and lately to her children as well. It appeared that several factors went to the production of this state of

depression. Her husband's social activities had grown while she was bringing up the children, and now, although she had them no longer to occupy her time, she could not take an interest in his amusements. It was as if someone belonging to her had been taken away from her, and her instinct would, consequently, be to keep him at home. Her conscious reasoning saw that these relaxations of his were innocent and good for him, so that conflict occurred between these two ideas. She may have been prevented from interfering with these pursuits of his by the fear that her presence might not be welcomed by her husband's friends. In any case, the fact remained that she was unable to keep him at home and consequently her instinct to do so was denied its outlet. It is probable that this conflict had been going on for the greater part of her married life, and only presented difficulties when the companionship of her daughter was lost.

How far her age was of importance in the production of this condition it is very difficult to say. It has been the practice to describe these cases as menopausal. The patient was still menstruating, but at irregular intervals, and it should be kept in mind that in such cases the mental disturbance has been existing for many years previous to the onset of the menopause, and that a debilitating illness is quite as likely to produce the same effect. It is common for cases of this type to date from an attack of influenza, which is looked upon by the patient as the cause of the illness, although the real reason for the appearance of the symptoms at this point is that the lowered condition of the body, caused by such an illness as influenza, lowers the resistance of the patient to the mental disturbance and enables the symptoms to appear. The menopausal factor must, however, be considered in treatment, and the administration of gland substances to support the whole gland system must be added to the general treatment of such cases.

Apart from the nursing home and general treatment usual in these cases, the whole situation was explained to both the patient and her husband. After she had been in the nursing home for some weeks and was beginning to recover her strength, to take an interest in books, and to begin to make plans for the future, her husband was advised to come up to town and to take her out to dine and to the theatre, and she was allowed to spend Christmas with him in an hotel in London. The physical fatigue caused by these expeditions was more than counterbalanced by the degree of mental comfort that she obtained by having her husband to herself. Eventually she was able to return home and take up her life again. Relief to her mind enabled her to overcome the physical state occasioned by grief, and she made a complete recovery, despite the fact that the menopausal symptoms still persisted.

This type of patient is usually classed among the psychoses, because the behaviour in the acute stages requires so much supervision and control, but with proper treatment it is possible to recover. No obvious changes are shown in the nervous system, except where these occur as a result of the toxins circulating in the blood stream. These changes are not, as a rule, of a permanent nature unless the condition is permitted to persist for a very long time. Properly treated in the earliest stage of the illness, these changes in the tissues are mild in character and only temporary in their effect.

ORTHOPÆDICS AT WEST HARTLEPOOL.—By the aid of the Samaritan Fund a specially designed and constructed orthopædic department has just been opened at the Cameron Hospital, West Hartlepool.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Lord Clarendon was the principal speaker at a luncheon last week in support of the re-building scheme. He said that a feature of the work of the hospital was immediate treatment without waiting for letters of recommendation, and that provision was being made for more than 18,000 new patients annually, in addition to the extension of the work of teaching and research. A gyratory system for the 40,000 out-patients would be introduced on the ground floor. No appeal for money had been made for 30 years. Sir Richard Cruise said that last year the hospital rescued 150 cases from approaching blindness.

THE EFFECT OF THE ADMINISTRATION OF SODIUM BETA-HYDROXY-BUTYRATE ON THE GLYCOSURIA OF PHLORIDZIN DIABETES.

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THE question of the conversion of fat into carbohydrate by the animal organism has been one of great controversy for many years. Most authorities agree that so far as the vegetable kingdom is concerned this change can occur, but in animals experimental proof is still lacking and opinion is divided. Lusk,[1] for instance, stoutly denies that such a transformation takes place, and certainly many of the experimental results justify such a conclusion. Geelmuyden,[2] on the other hand, believes that sugar can be formed from fat by the animal organism, and he quotes experiments in which he has found a distinct rise in the sugar output as a result of feeding acetone bodies to rabbits. In a series of injections of sodium acetoacetate and oxybutyrate to phloridzinised dogs, Marriott,[3] however, failed to find any increase in the output of glucose.

In the resting state it has been shown that, on the basis of oxidation of fats to CO_2 and water, it is possible for the tissues to make use of the energy liberated in this way. Murlin and Riche[4] showed that the intravenous injection of an emulsion of fat led to an increased heat production together with a fall in the respiratory quotient. In the case of external work, however, there is no evidence that muscles can use fat directly, although it has been clearly shown that they utilise glycogen. Benedict and Cathcart [5] have demonstrated that during muscular exercise fat and carbohydrate are apparently equally well utilised, and the work of Krogh and Lindhard [6] indicates that muscular work can be performed at the expense of fat in the diet.

Recently Hill, Long, and Lupton [7] have shown that the respiratory quotient of excess metabolism during short periods of exercise is unity, irrespective of diet. This indicates that, although fat in the diet may be used up during muscular exercise, the muscles themselves can only utilise carbohydrate.

If carbohydrate is the sole source of energy for contracting muscle, and if fat is utilised in the performance of muscular work, the conclusion appears inevitable that fat must undergo a preliminary conversion into carbohydrate previous to its use by the muscles. Geelmuyden [2] also suggests that fats are transformed into carbohydrate via a ketone body stage, the transformation taking place in the liver. This hypothesis seems reasonable when one considers that in all conditions where energy is obtained mainly from fat, as in starvation and during the administration of ketogenic diets, acetone bodies appear in excess in the blood and urine.

If this be true the administration of acetone bodies to a dog rendered diabetic by means of phloridzin might be expected to cause an increase in the output of sugar. This could be readily detected by a rise of the dextrose-nitrogen ratio in the urine, since in a completely phloridzinised animal all the glucose is presumably derived from the protein.

Two Experiments.

The following experiments were performed in order to find out whether any support could be adduced for this hypothesis. Sodium beta-hydroxy-butyrate, prepared by neutralising the racemic beta-hydroxybutyric acid with sodium hydroxide was used. It was

unfortunately impossible to obtain the lævo-rotatory acid. The same dog was used for both experiments, and on each occasion received a constant diet of 500 g. of minced meat twice daily. Phloridzin in olive oil was given subcutaneously in one gramme doses twice daily on each day of the experiment. The butyrate was given by stomach-tube at the end of the third day. In the second experiment a small amount was vomited shortly after administration so that probably not more than 15 g. was retained. The animal was catheterised at the end of each 24-hour period to ensure accuracy of the 24-hour sample of urine.

EXPERIMENT 1.—*Female Dog; weight 8·8 kilos.*

Day.	Total nitrogen.	Sugar output.	D : N ratio.
1st ..	14·3	43·1	3·01
2nd ..	15·0	47·1	3·14
3rd ..	16·1	52·6	3·26
25 g. sod. beta-hydroxy-butyrate given.			
4th ..	17·9	51·0	2·84
5th ..	17·5	55·5	3·17
6th ..	16·8	53·7	3·20
7th ..	14·7	45·4	3·08

EXPERIMENT 2.—*Female Dog; weight 9·3 kilos.*

Day.	Total nitrogen.	Sugar output.	D : N. ratio
1st ..	29·2 *	82·0	2·80
2nd..	17·1	87·7	5·12
3rd ..	18·5	93·4	5·05
20 g. sod. beta-hydroxy-butyrate given. Slight amount vomited.			
4th ..	17·4	95·2	5·47
5th ..	16·5	96·1	5·82
6th ..	19·7	109·8	5·57

* Done in triplicate.

In neither of the above experiments did the butyrate cause an appreciable rise in the D : N. ratio, thus agreeing with the results of Marriott.[3] Unfortunately we used only the racemic acid, and we feel that the results might have been more conclusive if we had also given the lævo-rotatory variety. Marriott suggests that, because the acid present in the urine is the lævo-rotatory form the body can only use the dextro-rotatory type, a conclusion which is scarcely warranted.

Whether the butyrate can be changed into sugar or not still remains an open question. Certainly no evidence of its conversion into sugar is afforded by the two experiments above. The experiments of Magnus-Levy [8] suggest that because of the phloridzinisation the animal might be incapable of burning the ingested beta-hydroxy-butyrate.

Also, it is quite possible that the extra sugar might have been stored in the muscles as glycogen, to be used during muscular exercise later on. As blood-sugar and presumably urinary sugar cannot be derived from the muscle glycogen there would be no change in the D : N ratio.

A further point of interest is that in the two experiments in the same animal under identical conditions, the D : N ratio should show such a marked difference.

We wish to acknowledge our thanks to Prof. D. Noël Paton for performing the operation of perineotomy and for his helpful advice, and to Prof. Leonard Findlay for his kindly criticism.

The expenses of this work were defrayed by the Medical Research Council, which we wish to express our gratitude.

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B. FALLAX IN CHRONIC ARTHRITIS.

BY J. MUTCH, B.A.,
AND
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IN the course of an investigation of the bacteriology of chronic arthritis, cultures were made from joints excised by Mr. W. H. Trethowan for orthopædic purposes. Very great care was taken during the operations to prevent contamination of the instruments and tissues by air-borne organisms. The material, which consisted of cartilage in various stages of erosion, ligament, and synovial membrane, was cut into small pieces. These were incubated aerobically at 37° in simple and in glucose broth. Frequently every tube remained sterile, in certain instances pyogenic cocci grew, and in one case a pure culture was obtained of *B. fallax*, an organism which has been isolated occasionally in the past from gangrenous wounds and cases of puerperal septicæmia. There is no record in the literature of chronic joint infection by this bacillus, so that the following details are of interest.

The material was obtained from a woman of 53 with chronic arthritis of several years' duration affecting both knees. The synovial membrane was much thickened, but there were no definite osteophytes, and limitation of movement was due chiefly to pain.

Isolation and Identification of the Organism.

The original cultures, made in broth, glucose broth, and on blood-agar, were incubated aerobically at 37° C. In two tubes of glucose broth a pure culture of a Gram-positive bacillus grew. The other tubes remained sterile. Subcultures in the absence of the pieces of actual tissue present in the original tubes yielded growths only under strictly anaerobic conditions.

The organism, a short Gram-positive, very slightly motile bacillus, was a strict anaerobe. Spores were never seen in young or in old cultures, but growth could be obtained from week-old blood-agar cultures which had been heated to 80° C. for ten minutes.

Blood-agar.—Growth slow and after 48 hours formed a fine grey film.

Glucose broth.—A fine opalescence after 48 hours.

Broth and agar.—Very little growth.

Litmus milk.—Slow acid formation. Seven to ten days required for clotting.

Sugar reactions (1 per cent. sugar in litmus broth).—Gas production inconspicuous (Table I.).

TABLE I.

—	24 hours.	12 days.	Evidence of growth.
Glucose ..	No acid	Acid +	Visible
Maltose ..	"	" —	Subculture
Lactose ..	"	" +	Visible
Saccharose ..	"	" —	"
Inulin ..	"	" —	"
Starch ..	"	" —	"
Dulcite ..	"	" —	Subculture
Glycerine ..	"	" ?	No growth visible or in subculture

Agglutination Reactions.

By the courtesy of Dr. M. Robertson, of the Lister Institute, standard cultures were obtained of several anaerobic organisms resembling the bacillus under investigation and were grown for three days in glucose broth. After centrifuging, the deposit was diluted with saline until each cubic centimetre contained 500 million bacilli, and was injected into rabbits at intervals of seven days: first dose 1 c.cm., second dose 2 c.cm., third dose 3 c.cm. The animals were bled ten days after the last inoculation and the agglutination reaction tested as in Table II., where it is shown that *B. fallax* (Morcom) serum agglutinated *B. fallax* (Morcom) itself and the bacillus Z

under investigation in very high titre. Investigated organism Z serum agglutinated organism Z itself and *B. fallax* (Morcom) in very high titre. No other agglutinations of any note were observed.

TABLE II.

Organism.	Serum.				
	Normal (1).	Normal (2).	Z.	*B. fallax*.	*B. fallax* (Morcom).
Bacillus Z*..	0	0	1/2000 in ¾ hr.	0	1/625 in 2 hrs.
*B. fallax**†..	0	0	0	1/125	0
B. fallax (Morcom)*†	0	1/5	1/2000 in 55 mins.	0	1/625 in 20 mins.
B. tertius†..	1/5	..	1/25	..	..
B. cochlearis†	..	..	0	..	..
B. welchii†..	..	..	0	..	..

* Under investigation. † Lister Institute.

It is evident that the organism forms agglutinins readily and closely resembles the strain *B. fallax* (Morcom) kept as a type culture at the Lister Institute. It seems justifiable, therefore, to classify it as *B. fallax*.

Infectivity.

Thick saline emulsions made from 24-hour cultures on blood-agar were injected intraperitoneally into mice without causing death or any appearance of illness. Several mice were killed at the end of 24 hours and cultures made from the blood, spleen, and peritoneal cavity. These remained sterile, except in the case of one mouse which showed a little fibrinous exudate on the liver. Cultures from this exudate gave a pure growth of an anaerobic Gram-positive bacillus resembling the original organism and agglutinated in high titre by *B. fallax* (Morcom) serum and investigated organism Z serum.

Intramuscular injections in guinea-pigs did not yield any living organisms in cultures made later from the tissues at the site of injection.

The organism clearly possesses infective powers, but under experimental conditions these are not of a high order. This agrees with the findings of other observers working with strains of *B. fallax* isolated from wounds.

Clinical Consideration.

Agglutinins are formed readily in human subjects. Dead organisms were employed in the form of a simple Wright's vaccine. Doses ranging from one million to 500 million were given in series and agglutination reactions tried five days after the inoculation (Table III.).

TABLE III.

—	Normal serum.	Serum after course of vaccine.
Original organism.	No agglutination.	1/200
Organism after passage through mouse.	Ditto	1/600

A similar vaccine was used subcutaneously in the treatment of 47 patients with chronic arthritis (venereal disease, gout, and tuberculous infections were excluded). The series must not be regarded as representative of the general community. Most of the patients had already been treated by autogenous vaccines and elimination of septic foci and belonged to the residuum which fails to reap substantial benefit from this type of treatment.

The results were of three kinds:—

1. In a number of cases small subcutaneous doses—e.g., one million bacilli—provoked intense reactions in the joints, and precipitated a transient attack closely resembling acute rheumatic fever of children. The severe reactions were not repeated with subsequent inoculation in the same patients, and were invariably followed by rapid improvement in the condition of the joints. All of these patients had previously had autogenous coccal vaccines without experiencing reactions of like nature.

2. The majority of patients improved steadily, and the pain reaction which commonly follows injections of autogenous vaccine made from pyogenic organisms was frequently replaced by its converse, a phase of gratifying freedom from pain lasting for several days.

3. A small but definite group of patients did not improve, and did not experience abrupt reactions, the transient phase of ease from pain or even (except in one instance) pain reactions in the joints.

The results can be tabulated as follows:—

	Per cent.
Abrupt febrile reactions after small subcutaneous doses	8
Simple pain reactions	35
Period of ease after each inoculation	39
No immediate change	18
OR	
Complete arrest	12
Decided benefit	70
No relief	18

Conclusions.

It has been impossible to determine by direct bacteriological methods whether *B. fallax* is a common cause of arthritis or only an occasional inhabitant of diseased joints, but the clinical manifestations following the use of the corresponding vaccine suggest strongly that this infection is much more prevalent than might have been imagined. There is no evidence that it is the universal infective agent, and in the series under review exceptional cases occurred in which improvement was steady under autogenous coccal vaccines, came to a standstill when *B. fallax* was substituted, and yet recommenced when *B. fallax* was discarded and the autogenous vaccine employed once more. The best results were obtained in the more chronic varieties of arthritis and in the treatment of residual pain and swelling in joints which had been more acutely inflamed but had passed into a sluggish phase after improving up to a point.

One such case is of particular interest. At the onset of illness there was much pyrexia with staphylococcal septicæmia, a large turbid exudate in the pleural cavity, and severe multiple arthritis. *Staphylococcus aureus* was obtained from the blood and from the chest. The corresponding vaccine provoked such intense reactions that its use was discarded for a time in favour of a polyvalent anti-staphylococcal serum. As the pyrexia subsided, the man was left with chronic multiple arthritis, indistinguishable clinically from that often classified as rheumatoid arthritis. In this phase his autogenous vaccine helped materially for a number of weeks but finally failed to be of any assistance. *B. fallax* vaccine was given and produced pain reactions in the joints. The man improved rapidly and in a few months' time was ready to return to work. In this patient it appears to be quite certain that the original invader of the joints was a pyogenic coccus. The benefit obtained from *B. fallax* in the later stages suggests that this organism was a secondary invader.

The effects following the use of *B. fallax* have been so impressive that it would seem advisable to add this organism to the autogenous vaccine in the treatment of chronic arthritis, especially when the joints have been damaged previously by injury or coccal infection or are the seat of disease which has been non-pyrexial and insidious from the onset.

Some time ago a series of 200 cases was analysed in which the importance of streptococcal infection of the digestive tract was discussed. Recently a further series of 103 cases has been treated on similar principles, but with the addition of *B. fallax* to the autogenous vaccine. The results have been distinctly better, and the method represents a definite advance in the therapeutics of the condition.

(*Bibliography at foot of next page.*)

Clinical and Laboratory Notes.

ULTRA-VIOLET IRRADIATION IN GANGRENE.

BY PAUL BOUSFIELD, M.R.C.S. ENG.,
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THE following case has interesting features:—

The patient was a woman aged 92. Her regular physician had been called in on account of a subacute attack of bronchitis, but on examining her back he found two large patches of dry brown gangrene which involved the skin and superficial fascia. Round the edges of the gangrenous patches, which had retracted, there was about a quarter of an inch of raw flesh from which was oozing blood and a small amount of pus. One of the patches of gangrene was over the right scapula; it was oval in shape and had an area of about 15 sq. in. After the slough was removed the depth of this lesion was about an eighth of an inch. The other patch was over the posterior aspect of the head of the right humerus, and was about 4 sq. in. in area; after the slough had been removed the wound was a quarter of an inch in depth. There was also an oozing bedsore with an area of 2 sq. in. over the upper part of the sacrum.

The history of the gangrenous patches was interesting. The old lady had been in the habit of sitting upright in a chair with a stiff, high, wooden back, against which she leaned on her right side for hours at a time in order to look out of the window. The pressure had evidently occluded the blood-vessels in the gangrenous areas.

Her condition was aggravated by renal insufficiency and cystitis of some years' standing, and her physician naturally took a very grave view of the case. Knowing the effect of ultra-violet irradiation on small ulcers he asked me if it was likely to be of any use in this case. I consented to test its effect, though I hardly considered in such a patient that it was likely to be completely successful. The gangrenous sloughs were first removed by repeated fomentation and with the help of scissors and forceps, with the result that the two raw excavated surfaces, described above, were left bare. I then proceeded with the irradiation, using a portable arc which required 5 amperes at 240 volts to work it. The current at the patient's house was unfortunately an alternating one, and I was therefore only able to use iron-cored carbon electrodes instead of tungsten which I should have preferred. I mention this because the electrodes I used only develop an ultra-violet spectrum down to about 3000 A.U. wave-length, whereas tungsten electrodes reach as far as 1800 A.U. wave-length, and it is in this latter portion of the spectrum that the bactericidal rays are developed. This is noteworthy because after two treatments the pus had completely disappeared and did not again return, in spite of the fact that the patient repeatedly pulled off her bandages.

I began with a dose from the open arc at a distance of 3 ft. for a quarter of an hour, irradiating the whole back, but using a concave mirror so as to focus radiant heat directly upon the open wounds. The same dose was repeated in 48 hours, and thereafter was gradually increased up to 20 minutes, and the arc brought to within 18 in. of the wound. After the first two treatments the pus had disappeared. After four—i.e., at the end of ten days—new skin had formed half an inch all round the larger wound, and both wounds were covered with healthy granulations. The oozing of blood, which had been continuous at first, had also completely ceased. After eight treatments—i.e., three weeks—the large wound was entirely covered with skin except for a small patch about the size of a sixpence in the centre, and the small wound had developed about half an inch of skin round the margin. Granulations in the centre of this wound were proliferating too fast and had to be touched with copper sulphate. At the end of about six weeks both wounds were completely covered with healthy skin, and the bedsore over the sacrum, which had also been treated, was completely healed.

A noteworthy side-issue was the great improvement in the general condition of the patient. When first seen, and for a month or so previously, she had been in a dazed and sometimes rather comatose condition; at the end of the treatment she was bright, cheerful, and intelligent.

The case is particularly interesting in that it suggests that bedsores in old people, which so frequently usher in the terminal event where bad nursing has preceded the physician's arrival, may now be more amenable to treatment.

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DIASTATIC REACTION IN OBSTRUCTIVE JAUNDICE.

BY JOHN D. THOMSON, M.B., C.M.

IN May, 1922, when engaged in investigating the efficiency of the pancreas and liver in cases of sprue at the Seamen's Hospital for Tropical Diseases, London, I was asked by the resident surgeon if any of the biochemical methods I was employing would be likely to throw light on an obscure case of obstructive jaundice that was then causing anxiety. Although several years have since elapsed I am led to believe that a few details of this case, suggesting the more general use of a very simple test, may be of interest.

Recent History.—The patient, an adult male well over middle age, had been operated on for gall-stones some weeks before his case was brought to my notice. The gall-bladder had been emptied of calculi and drained. In the ordinary course of events bile should now have been present in the stools and the drainage-tube dispensed with. As it was, there was still no trace of bile in the stools, and the tube draining the gall-bladder had to be retained. The patient was losing ground and his general condition now suggested malignant disease (? cancer of the head of the pancreas) to the surgeon who had operated. I understand that the surgeon had satisfied himself, by passing a probe at the time of operation, that the common duct was free and that all calculi had been removed.

Diastatic Reactions.—The diastatic reaction of the patient's urine would, I thought, throw some light on the case, and I offered to do a series of such reactions if necessary. The results were as follows:—

Date of examination.	Result.	Date of examination.	Result.
May 19th..	..D. = 10–20.	June 7th..	..D. = 25.
May 30th..	..D. = 66	June 8th..	..D. = 66.
May 31st..	..D. = 300.	June 12th..	..D. = 100.
June 6th..	..D. = 100.	June 14th..	..D. = 100.

On May 19th the diastatic reaction (D=10–20) was normal, which showed that there was no obstruction to the flow of pancreatic juice into the bowel. As bile was draining freely

from the drainage-tube in the gall-bladder while there was no trace of it in the stools, the site of the biliary obstruction could be located with certainty as being then in the common duct somewhere below the entrance of the duct from the gall-bladder and above the entrance of the pancreatic duct.

Some days later, as the patient's condition did not improve but rather grew worse, the examinations were resumed. On May 30th the reaction (D=66) showed that the obstruction now partially involved the pancreatic duct. On May 31st pancreatic obstruction was complete. At this stage I asked the house surgeon to keep a sharp look-out during the next few days for the appearance of bile and for the presence of a gall-stone in the stools. But biliary obstruction remaining complete as before, the examinations were again resumed, and the results from June 6th to 14th clearly show that pancreatic obstruction, from being complete on May 31st, eased off until it reached a minimum on June 7th. It again increased until, on the 12th and 14th, it was of the same degree as it had been on June 6th.

This indicated a ball-valve action so far as the pancreatic obstruction was concerned, and made it reasonably certain that the biliary obstruction was due to a gall-stone that had passed along the common duct, and was now caught in Vater's papilla. This diagnosis was confirmed by the surgeon, who now operated a second time and removed a gall-stone from the site indicated. The patient made a good recovery, and there was no further sign of biliary obstruction. Incidentally it may be remarked that these diastatic reactions showed that the kidneys were normally efficient.

A CASE OF
FACIAL PARALYSIS OF AURAL ORIGIN
IN AN INFANT SEVEN WEEKS OLD.

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AND
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ASSISTANT SURGEON TO THE HOSPITAL.

THIS case seemed to us to be worth recording, as we have not known of a similar one occurring in infancy.

The child was born after a normal confinement, without instruments, and seems to have been normal in every way until, at seven weeks old, it was noticed that the left side of the face did not move when she cried. She was seen by one of us (N. H.) at the Victoria Hospital for Children on Jan. 21st, 1927. There was marked diminution of movement on the left side of the face, but paralysis was not complete. The eyelid remained almost immobile in a half-closed position; otherwise the cranial nerves were normal. There was no discharge from the ear, and no indication of pain in any situation, and the child did not appear fretful. The only abnormality detected was a slightly enlarged pre-auricular gland on the left side. The mother stated that the child was still able to suck, though rather more slowly than before.

Aural examination (C. J. M.) showed that the drum was opaque and hyperæmic, with pronounced bulging. No mastoid tenderness or œdema was present. The right drum was normal. There was nasopharyngeal muco-pus, but no gross adenoid vegetations. On paracentesis of the left drum pus welled up in sufficient quantity to fill the external meatus. Rapid healing of the drum, with complete recovery of the otitis, ensued. The infant, seen just over two months later, showed no trace of facial paralysis; the drum was slightly more opaque, and the scar of the incision was just visible.

The inflammation of the nerve must have occurred in the middle ear, in the aqueduct. Considering the negligible size of the mastoid antrum at this age, the locality in which so large a quantity of pus was contained is rather difficult to determine. A remarkable feature of the case was the very slight interference with the function of sucking which the facial paralysis produced. This suggests that the part played by the facial muscles in the mechanism of sucking is less important than has been supposed, and that this function is almost entirely carried out by the muscles attached to the mandible and innervated by the fifth nerve.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ORTHOPÆDICS.

A MEETING of this Section was held on May 3rd, Dr. W. T. GORDON PUGH, the President, in the chair.

Mr. NORMAN D. ROYLE (Sydney) read a paper, illustrated by epidiascope and cinematograph on the

TREATMENT OF SPASTIC PARALYSIS BY SYMPATHETIC RAMISECTION.

His purpose, he said, was to give some ocular proof of the results of this operation. He had read the criticisms of the method which had emanated from Britain and America, and he found that in the United States, which he had just visited, the operation was almost universally accepted. Harvey Cushing certainly favoured the idea.

Dealing first with the results he had obtained in animals, Mr. Royle said that the immediate effect of cutting the sympathetic nerve was to cause vaso dilatation; in a thin subject this was evident as soon as the nerves were cut, whereas in a fat subject it might not become established for an hour or two. Also there was a definite change in temperature after the section—in one case as much as 7° F. The next observed result was a change in muscle tone, which was brought out in the cinematograph film. Before operation the patient's reflexes were rapid and jerky, but the muscle tone, as described by Holmes and Walsh, disappeared after sympathetic ramisection. The goat was a good animal on which to show these changes. In a general way, too, the limbs from which the sympathetic nerves had been removed behaved differently from the limbs in which they were intact.

A patient, whose leg after operation comported itself as if it had no tone at all, said that before the operation he was unable to relax, whereas now he could do so. This meant that before being operated upon, if his leg went out into a position of extension the only movement was a reflex one, and when the reflex movement was elicited he was unable to let go. It was useful to consider how muscle tone was controlled normally. Under ordinary circumstances a person had no control of muscle tone, excepting as a concomitant of active movement; the eye could be opened or closed, but when open it remained more or less in the same position without intervention; it could not be made more fixed nor less fixed. In lesions of the nervous system the patient might lose control over his phasic movement; secondly, he lost the power of letting go of his muscles. In addition there was a release of function in the centres controlling movement and in those controlling tone. If under ordinary circumstances we had no control over tone, then under these abnormal circumstances tone became an obstacle to movement. And this affected all groups of muscles, not only the extensors, but, in spastic paralysis, the flexors also. Mr. Royle showed on the film one patient who before operation had no control over movement, but in 20 days thereafter showed considerable control. In examining these patients he said it was important to distinguish between clonus and lengthening and shortening reactions.

One patient whom he had had under control many years had previously had Stoffel's operation performed for the adductors and flexors of the knee, and for the peroneal group of muscles, but it had not given her balance. The result given by ramisection within a month was much more satisfactory than the other procedures had given in the course of years, even though attempts at educating the muscles had been patiently carried out. The defect was a congenital one.

The next patient shown had such a useless right upper limb that he was unable to distinguish one sensation from another, and could not open and close the hand. On the day following the operation, however, he was able to close his hand on the bandage.

A further patient had considerable abductor spasm, and in addition to ramisection Mr. Royle had lengthened the hamstring muscles. Nothing had been done to the adductors; 12 months after operation the patient was able to walk without aid other than that of a stick.

A woman, aged 23, with congenital spastic paraplegia, showed extension of the foot and dorsiflexion in coördination with the knee. The knee-jerk was brisk. Six weeks after bilateral sympathetic ramisectomy she was able to walk supported by two sticks; she had never walked before. She could also balance.

The subsequent history of this patient was interesting, said Mr. Royle, in view of the work of the Russian school, which had shown that removal of the sympathetic made patients more able to resist fatigue. This young woman had at first been able to walk only a few yards; subsequently she improved so that she could now walk for miles. These patients were able to walk because something had been taken away which prevented inhibition. Where contractures existed, his plan was to perform sympathetic ramisectomy on one side, dividing the hamstring muscles, lengthening the tendo Achillis, and indeed doing whatever was necessary, at one sitting on one side. A boy on whom this was done was able six weeks afterwards to walk up and down stairs with little apparent difficulty, and could run. Often the operation brought about a beneficial change in the condition of the patient's bowel; many had been obstinately constipated, the bowel was dilated, and motions usually had to be stimulated by an aperient. After ramisection, however, daily evacuations took place without such aid.

The latest application of the operation, so far as he was aware, was to Hirschsprung's disease. Wade, of Sydney, had operated upon a boy 10 years old with this condition, who had never had a normal motion, enemata or aperients always being needed. After leaving hospital he had a normal motion every day without an aperient. In such a case the operation differed from that for deformity of a limb in that the rami divided were those going to the inferior mesenteric ganglion, and the operation was done on one side only. In America he had been told that no result was obtained from removal of the abdominal sympathetic on one side, but this he thought was because the operators did not go high enough. Experimental mesenteric ramisection in the goat had resulted in an increase in the normal number of its motions.

A boy, aged 16, with congenital spastic paraplegia, had never walked, but tenotomies had been performed on him. His knee was somewhat flexed at the knee. After ramisection his first attempts at walking showed the knee still flexed. Six months after ramisection he was bowling at cricket, and the film depicted him playing tennis.

When he first introduced this operation for spastic paralysis, said Mr. Royle, he had the idea that spastic chorea and athetosis were contra-indications, but he had not tried it for those conditions. He now showed films of cases of chorea.

The first was that of a little boy whom he had had under observation for some years. The boy had gone to live in another Australian city, and had come back four years later with the same degree of spasticity in the hands and intense choreiform movements. After operation there was very definite improvement, steady movements could be performed, and the function of the limb was greatly enhanced.

A girl, aged 19, with the same condition was unable to sit up unsupported. In her the operation restored power of inhibition of voluntary movements by taking the tone out of the muscles. Four weeks after the operation she was able to open and close her hand well and to grasp objects.

A young woman, with spastic diplegia and chorea was able to walk only a few yards. After operation she was able to balance and to walk 100 yards.

A boy shown had previously had tenotomies done and a fusion operation, arthrodesis of the ankle-joint. After operation, when the boy had been home a week, he was able to walk quite passably, though he had stiff ankles.

Mr. Royle said that he showed the next picture as an answer to those who stated that the results achieved were due to education or re-education of the musculature. This was a child aged 18 months. Before the operation the child was unable to use its right hand. Four weeks after ramisection the child was shown reaching out and grasping objects. Another child with a defective left hand showed efficient pronation and supination a few days after the operation.

The final case shown was one of post-encephalitic rigidity following encephalitis lethargica.

The patient was a man, aged 27, who was admitted to hospital in July, 1924. The family history showed no hereditary taint, and as a child he was healthy. He gave three years of active service in the war. He was quite well until a fortnight before the Christmas of 1923, when he felt weak while at work, and had to go home. After three days in hospital he became unconscious and delirious. The delirium lasted four days. He was able to leave the hospital a fortnight later, but felt weak in all his limbs, chiefly in the left upper and lower ones. He was also very constipated. Gradually his condition got worse and his facial expression became more and more fixed. On his admission to hospital speech was slow and monotonous. There was no disturbance of sensation. The left upper extremity was held fixed, and was adducted across the chest, and there appeared to be rigidity of the left leg. There was a complaint of generalised weakness and stiffness of movement, the latter all being slowly performed, though there was no actual paralysis nor tremors. Knee-jerks were exaggerated, and the plantar reflex was flexor. The abdominal and cremasteric reflexes were active. The pupils were equal, but reacted sluggishly to light and accommodation. Tests for syphilis, both of blood and cerebro-spinal fluid, were negative. When out of bed there was evidence of considerable motor disability. Injections of hyoscine relieved the muscular rigidity within four hours, but in two or three days the effect of this had gradually worn off. Saline injections—given to exclude the factor of suggestion—had no influence on the rigidity. In January, 1927, he was strikingly better than before the operation; he was now able to sit erect, and both arms assumed a normal posture, the facies was more mobile and lively, though there was still a tendency for the expression to slowly "fade." Movements of both upper extremities were now comparatively free at the proximal joints, though piano-playing movements were poorly carried out. The gait also was now active and lively, and he could ascend and descend stairs with little difficulty. The bowels were now evacuated daily without help.

The invitation of the PRESIDENT to discuss the contribution met with no response. In thanking Mr. Royle for his communication Dr. Pugh referred to the untimely death, at the age of 26, of his brilliant collaborator Dr. Hunter.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held on April 29th, Sir HUMPHRY ROLLESTON, the President, in the chair.

Dr. REDVERS N. IRONSIDE opened a discussion on the

Prophylaxis of Neurosyphilis.

He dealt first with the efficient treatment of primary syphilis while the Wassermann reaction in the blood was still negative. It was known that the nervous system was, or might be, affected with greater frequency and at a much earlier stage than was formerly supposed, so that it behoved the neurologist to concern himself not only with established disease and its treatment, but also with the changes induced in the organism from the time of infection. Eighteen years ago Ehrlich had given the profession a spirochæticide, salvarsan. Had there been a decrease since then owing to more efficient treatment of the primary infection in the frequency of neurosyphilis? It was rational to believe that the incidence should be less, but he held that no definite statement was possible at the present time, for observers were dependent on personal impressions rather than on definite statistical evidence. There were certain indications that neurosyphilis was less frequent, including the evidence given in the statistics of a large insurance company (Metropolitan Life) which, in 1917, showed a rate of 16·6 per 1000, dropping in 1922 to 13·1 per 1000. What he thought could be definitely stated was that syphilis of the nervous system was nowadays seen earlier and was less severe in its manifestations. It was a commonplace among neurologists that patients with late neurosyphilis

gave a history of little or no treatment of the primary disease. The prophylaxis of neurosyphilis would appear generally to depend on effective destruction of the spirochætes, if possible before the infection had become generalised. Efficient management of the primary stages must include thorough physical examination and a study of the cerebro-spinal fluid. Lumbar puncture had great importance in the diagnosis of syphilis per se; it was indispensable as a guide to treatment and to cure or arrest. By 1915 it had been shown conclusively that early neurosyphilis could be recognised by special examination of the fluid before secondary symptoms appeared. It had become apparent that there was no necessary correlation between symptoms and changes in the spinal fluid; a person with serological evidence of severe neurosyphilis might have no symptoms in his central nervous system, while one with severe symptoms of pathological destruction might have a normal fluid. The fact that the spinal fluid might be the sole guide to an otherwise symptomatic and hidden involvement of the central nervous system justified routine use of the test in all cases at the proper time during their course.

Turning to the recognition and indications for treatment of latent syphilis, Dr. Ironside advised the examination of the cerebro-spinal fluid in all cases of latency. Complete examinations should be made biennially over a period of 10 or 15 years; this was a fair compromise with the patient. When the cerebro-spinal fluid was normal the case should be left alone—though kept under control—provided the patient had had efficient treatment. When the fluid was positive treatment should be given energetically with all the means available. The incubation period of clinically manifest neurosyphilis ranged from three months to over 20 years. If a graph were made of it, a rise would be seen during the first year owing to acute syphilitic meningitis, meningomyelitis, and cerebral syphilis. There was a further rise 6 to 11 years later, due to the fact that tabes and general paralysis of the insane had their greatest incidence at this length of time after infection. Thus the conception had arisen of acute syphilis of the nervous system, a virulent process, in which the patient's resistance was relatively low, and chronic syphilis of the nervous system, characterised by mildness of the early lesions, a long latent period indicating a high degree of resistance of the host, the chronicity of the commoner forms, and the absence of acute constitutional reaction, such as fever.

Finally Dr. Ironside touched on the problem of the syphilitic parent. The Hoffmann rule, which crystallised conservative European opinion, called for three years of treatment with novarsenobenzol and mercury and two years of symptom-free observation before marriage. In the light of modern work this would include a repeatedly negative Wassermann reaction in the blood and cerebro-spinal fluid from the end of the first six months of treatment.

Discussion.

Dr. PAUL FILDES, speaking of the early diagnosis of neurosyphilis, said that for years it had been known that a large proportion of cases of syphilis in the early stages, even before the Wassermann reaction had become positive, had variable degrees of meningitis, as was shown by the presence of spirochætes and possibly by a positive Wassermann reaction in the cerebro-spinal fluid. The extraordinary thing about these cases of meningitis was that they seldom exhibited any clinical signs of a lesion of the central nervous system, and it was still unknown what was their subsequent fate. He knew that 10 or more years ago hundreds of men in the navy underwent lumbar puncture in the primary stage of syphilis. Could not some information be forthcoming as to what had happened to them? He also inquired whether it might not be possible to increase the efficiency of antisyphilitic drugs. Salvarsan did not penetrate into the brain, and so could have no action in those cases in which the spirochætes were lying in the parenchymatous tissue of the brain. According to some authorities, it was possible to obtain a profusion of antibodies in serum passing through the cerebral capillaries into the brain by the intravenous injection of urotropin at the same time as the antitoxin. Certainly there seemed to be some evidence that the permeability of these vessels could be affected by urotropin. The difficulty with salvarsan compounds was that they were excessively toxic, and it was possible that some of the severe cerebral reactions that were seen in cases of syphilis of the brain after salvarsan treatment might be due to traces of the salvarsan getting into the brain, owing to the greater permeability of the cerebral capillaries arising out of the inflammation.

Mr. DAVID LEES agreed in emphasising the need for repeated clinical examination of the central nervous system. He complained of colleagues in other specialties that they were apt to look lightly on syphilis and neurosyphilis, with the result that disasters sometimes occurred. General practitioners also undoubtedly under-treated rather than over-treated these conditions.

Colonel L. W. HARRISON laid stress on the necessity for using arsenobenzol in combination either with mercury or bismuth, and giving the two drugs simultaneously. The absence of clinically manifest neurosyphilis among thousands of cases treated at his clinic he put down to this combined form of treatment.

Dr. WILFRID FOX referred to the unpleasantness to the patient of the withdrawal of cerebro-spinal fluid. The whole subject, particularly under the prolonged period of control and frequent re-examination called for, bristled with difficulties.

Dr. H. M. HANSCHELL referred to some work done upon trypanosome infections, in which the dose of arsenic given by intrathecal injection was regulated according to the weight of the brain and spinal cord of the animal. He had applied this principle in treating cases of G.P.I., and had found that the patient could stand as much as 6 mg. of novarsenobenzol placed right into the theca. It did not cure the G.P.I., but it had no adverse effect.

Dr. DAVID NABARRO said that he had had success in the treatment of G.P.I. by intrathecal injection of salvarsanised serum via the cisterna magna.

Mr. C. H. MILLS was surprised to hear members reverting to intrathecal injections of salvarsanised sera; he thought these had been tested in the past and had been condemned.

Mr. WANSEY BAYLY did not quite understand why marriage should be advised against for so long a period as three, four, or five years, especially if the wife was treated, as a precautionary measure, during pregnancy. He always allowed his patients to marry after a year, and had never known of any unfortunate results.

Dr. IRONSIDE briefly replied on the discussion, which, from the point of view of prognosis and treatment, will be continued at the next meeting.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this Society held on May 5th, Dr. E. RIVAZ HUNT, the President, in the chair, Mr. F. E. FEILDEN gave an address on the

Treatment of Urethral Stricture.

The condition, he said, is serious, but fortunately not so common as it was a comparatively few years ago. For its efficient treatment it is necessary to realise that the bulb, where most strictures occur, is the widest portion of the urethra and the external meatus the narrowest. Many strictures can be cured permanently by means of a Kollmann's dilator. The stricture may be of inflammatory, traumatic, or congenital origin, occurring in this order of frequency. Those due to gonorrhœa are not uncommonly multiple. A single stricture in the penile urethra is rare, and except after operation strictures are seldom found in the prostatic urethra. The occurrence of 75 per cent. of strictures in the bulb is probably partly because it is the most dependent

part of the urethra, which causes gonorrhœal discharge to collect in it, and partly because the full force of micturition is directed against this part of the canal, so that trauma may be produced, leading to infiltration of the mucosa. When the narrowing has progressed sufficiently to cause obstruction the force of the urinary stream increases the chronic inflammatory reaction. In support of this view it may be mentioned, said Mr. Feilden, that in cases of multiple stricture the narrowest stricture is situated nearest the bladder. Excision should be reserved for cases in which the condition is due to trauma. Probably the incidence of stricture could be reduced if every case of gonorrhœa, before being discharged as cured, were submitted to full dilatation.

Greater use should be made of the urethroscope, continued Mr. Feilden; some cases cannot be cured without its aid. A gentle hand is most important in passing urethral instruments. Unfortunate results are produced not so much by the introduction of organisms as by avoidable trauma of the urethral mucosa. Most strictures are amenable to treatment by dilatation. As regards silver instruments, the smaller sizes should be avoided, for they are likely to produce false passages. Silk-web bougies should be used up to 18, then steel up to 12/15, after which the stricture should be dilated up to 45 Charrière with a Kollmann. In chronic retention, to avoid disaster, rapid evacuation of the bladder should never be allowed. Strictures ought never to be forced, but some can be rapidly dilated at one sitting. Internal urethrotomy is a most satisfactory operation, and often no further instrumentation is necessary after internal urethrotomy and full dilatation. If there is marked urinary infection or renal insufficiency, drainage of the bladder should precede the urethrotomy. In impermeable strictures, or those resulting from trauma, Wheelhouse's urethrotomy is the method of choice, and it should be done in all cases of stricture of the bulb associated with periurethritis, periurethral abscess, extravasation of urine, or severe cystitis. In elderly patients with recurring epididymitis bilateral vasectomy may be done with advantage. A malignant prostate closely resembles a stricture, as there is no residual urine in either case. Tabes, by producing atony of the bladder, may be the cause of an apparent acute or chronic retention. The infection behind the stricture must be treated concurrently with the stricture.

ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

A MEETING of this Society was held on April 8th, Dr. J. M. COWAN, the President, in the chair.

Dr. JAMES ADAM read a paper on

Bronchiectasis of Inhalatory Origin.

He said that for diagnostic purposes he preferred to inject lipiodol through the glottis after passing a gum-elastic catheter between the cords with the aid of a Jackson laryngoscope. This took only a few seconds to put in position. With older children and adults it could be done with the patient sitting down, the larynx being cocainised; with young children no anæsthetic was necessary and the patient was supine.

After insisting on the need for careful inquiry as to the patient's history and for X ray examination before and after injection of lipiodol, Dr. Adam gave his experience of nine cases of bronchiectasis associated with nasal sinusitis and of four post-pneumonic cases. The former group entirely or mainly affected the right lung. Nasal sinusitis as a cause of bronchiectasis had been entirely overlooked in this country, though not in America, and bronchiectasis of this origin was preventable by prompt nasal investigation and treatment. It was possible, he said, that fatal termination of bronchiectasis by cerebral abscess was due to metastasis from the nose as well as from the lung.

Dr. Adam concluded by giving the results of treatment by nasal operation, bronchoscopic suction, and lavage, and by two-hourly inversion. Suction was important at the beginning of treatment; the value of lavage was open to doubt, at any rate in many cases. Of the value of systematic inversion there was no doubt whatever.

Prof. LEONARD FINDLAY, speaking on the

Ætiology and Diagnosis of Bronchiectasis in Childhood,

said that at first sight it might seem one-sided to consider only the condition as met with in children, but it should be remembered that in any large series of examples of chronic pneumonia and bronchiectasis the majority of the patients were children or had apparently developed the disease during childhood. The symptoms were very variable, as he showed by cases in which diagnosis had only been made certain either by intratracheal injection of lipiodol or at autopsy. His experience coincided with that of Armand Delille—that there were three types of cases: (1) cases of bronchiectasis with typical signs and symptoms; (2) cases with suggestive symptoms, but no bronchiectasis; and (3) cases of bronchiectasis with neither signs nor symptoms. Consequently he had no hesitation in saying that not only for the diagnosis of bronchiectasis but also to get correct information about its extent, the injection of lipiodol was essential, and he considered that in pulmonary diagnosis the use of lipiodol was the greatest advance since the introduction of radiology.

Prof. Findlay gave an analysis of the signs and symptoms of 25 cases in which the diagnosis was confirmed either during life with lipiodol or at autopsy. As a rule the children were undersized but well nourished. Clubbing of the fingers was present in 11 cases, and was related more to the extent of the disease that to its duration. Cough was present in 24 and absent in 1. Spit was present in 17 cases and absent in 6; in all of these 6 the disease was of less than 18 months' duration. In only 3 cases was the sputum fœtid. Amphoric breathing was audible in 10 cases and whispered pectoriloquy in 7. As in all previously recorded series the left lung was most frequently the seat of the disease; in 16 cases the left lung alone was involved; in 4 the right lung alone; and in 5 both lungs were attacked. In no case was the apex alone the seat of the disease. Prof. Findlay considered that the disease was caused by, and in fact simply part and parcel of, chronic pneumonia, as had been suggested by Corrigan, though pleural adhesions, to which Hamilton had first drawn attention, also played a part. In his post-mortem material both chronic pneumonia and pleural adhesions had invariably been present. The conditions could be traced in all but three of his series of cases to some acute pulmonary disease such as primary broncho-pneumonia, or broncho-pneumonia secondary to the infectious fevers or pleurisy. In three cases the condition had set in insidiously.

Dr. STANLEY GRAHAM dealt with the

Technique of Intrapulmonary Injection of Lipiodol.

Lipiodol, he said, was a viscid vegetable oil containing approximately 40 per cent. iodine combined with it—not merely in solution. Ten years ago, in Sicard's clinique, a patient was receiving intramuscular injections of lipiodol into the buttock for therapeutic purposes and a chance X ray examination revealed the fact that this iodised oil was impervious to the X rays. This had led Sicard and Forestier to investigate the possibilities of its use for diagnosis. The iodised oil could be introduced into the trachea either by means of a tube through the glottis (laryngeal syringe or bronchoscope) or by a needle inserted through the cricothyroid membrane. In adults the use of the laryngeal tube might be comparatively simple, but in children, in his experience, it was undoubtedly not the method of choice. In a child the glottis was small, and furthermore, it was exceedingly difficult to get the pharynx and larynx sufficiently

anæsthetised to permit of the operation. The same objections applied, of course, to the use of the bronchoscope in children. In adults, good pictures could undoubtedly be obtained, but scarcely, he thought, as good as those obtained when the lipiodol was introduced through the cricothyroid membrane. In any case, in children a general anæsthetic was advisable for psychical reasons, apart altogether from the physical discomfort of the operation. In older children it was quite possible by means of local anæsthesia to insert the needle into the trachea through the cricothyroid membrane, but the parts were very soft and it was difficult to get the child to avoid any movement or act of swallowing, so that the site of operation might be kept at rest. With the child under an anæsthetic, however, it is comparatively easy to enter the trachea through the cricothyroid membrane. The needle he had found most satisfactory was one curved and mounted with a flange like a tracheotomy tube. The stilette might project beyond the point of the needle when it had a blunt end, just as in an ordinary trocar and cannula, but the form of needle employed in lumbar puncture was better; here the needle was sharpened at an angle of 45° and the stillette similarly angled to become flush with the needle point. The size of the needle was of importance. It should be large enough to permit of the oil being forced through the lumen.

Lipiodol was a very viscid fluid and should be warmed to body temperature as this facilitated its flow through the needle. Indeed, if this precaution of warming was not taken it would be found impossible to force it through the usual size of needle as shown in the slide, especially when it was curved in the shape of a tracheotomy tube. Therefore a syringe which could be heated was to be recommended. As great pressure was often needed, a device whereby the piston could be screwed home was convenient.

Before administering the anæsthetic, the bronchiectatic cavities should always be emptied as completely as possible by inverting the child and inducing him to cough. This was important, for two reasons. First, it permitted the more ready and complete filling of the cavities, thus producing a better and more clear-cut picture; and, secondly, it obviated the coughing up of large amounts of sputum during the operation. The child being completely anæsthetised, the thyroid cartilage was grasped between finger and thumb of the left hand; the cricothyroid membrane was then identified and the needle inserted in a downward and backward direction. With a large needle the operator learnt immediately whether it was in the trachea from the rush of air on withdrawal of the stilette, just as at the introduction of a tracheotomy tube. With a smaller needle the lumen was very readily blocked with the purulent secretion in the trachea so that no air could pass. It has been found, however, that this point could be readily settled by attaching a syringe and applying suction. Where a needle had entered the lumen of the trachea air could be readily withdrawn and also introduced. After making sure that the needle was in the trachea, 1–2 c.cm. of 4 per cent. novocaine was introduced to lessen the tendency to cough. Then the syringe filled with lipiodol (15–18 c.cm.) was attached and the oil slowly injected. The entrance of the oil might be aided by elevating the shoulders slightly while it was being injected. In his experience it was unnecessary to turn the child on its side to facilitate the flow into one or other lung, as the bronchiectatic portions of the lung seemed to have an affinity for the oil, perhaps owing to diminished expiratory efforts and resistance in the affected bronchi. Immediately after injection was complete an X ray photograph of the chest was taken, and it was therefore advantageous when possible to carry out the whole procedure in the X ray department; in the case of children an instantaneous apparatus was essential for the production of sharp pictures.

It was very important that enough lipiodol should be injected. At least 18 c.cm. were required, and often better results are obtained by giving 36 c.cm. As a rule, some of the lipiodol was coughed up and swallowed, but enough would remain in the bronchial tree to demonstrate any abnormality.

The method was almost free from danger, and Forestier had recently said that he had never seen or heard of any fatal accident. Dr. Graham himself had seen only two accidents. In one of the earlier cases, before the necessity was understood of making absolutely sure that the needle was in the lumen of the trachea (by attaching a syringe and applying suction), some of the lipiodol was injected into the surrounding tissues and could be seen on X ray examination as an opaque irregular mass in the upper part of the chest. In the other case the patient (a boy of 3 years) had a violent fit of coughing on recovering from the anæsthetic and a severe subcutaneous emphysema was produced. It had been found that this coughing could be controlled to a certain extent by a hypodermic injection of morphia, and this was advisable if it was severe. In neither case did the patient receive any permanent danger. The subcutaneous emphysema cleared up very quickly, and in the first case the oil would presumably be absorbed through time and the patient was in no way inconvenienced.

Although some writers had reported iodism following the use of lipiodol, he had not observed it. As much as 30–38 c.cm. could be given to a child without untoward effects. Presumably most of it was coughed up and, at any rate, the absorption of the oil from the site of the bronchiectasis must be very greatly diminished.

Discussion.

Dr. J. B. MACKENZIE ANDERSON said that his experience of bronchiectasis had been mostly confined to adults, but he agreed with Prof. Findlay that the great majority of cases gave a long history and probably started in the early 'teens. Most of his patients had been males, the proportion being roughly 5 to 1. An early history was usually obtained of tuberculosis, pneumonia, pleurisy, or empyema. Of two cases in elderly people one was associated with a neoplasm and the other with an aneurysm. He had no personal experience of lipiodol and was inclined to think that its use was limited, as in most cases the clinical picture was fairly typical and the use of lipiodol unnecessary.

Dr. W. S. SYME said that his experience at the Throat and Nose Department of the Western Infirmary and elsewhere suggested to him that there are two quite distinct types of bronchiectasis. The first was due to the inhalation of a foreign body. Usually one single large cavity was formed, doubtless by ulceration of the wall of a bronchus, as was indicated by the presence of granulations. For these the appropriate treatment was lavage of the cavity after removal of the foreign body where it could be found. In some of these cases he had no doubt the foreign body was derived from the purulent discharge from an accessory nasal sinus, and often improved considerably when the sinus was treated. The second type of case was that referred by physicians. In these cases there were usually a number of small cavities and the condition could not suitably be treated by lavage. Dr. Syme was convinced that disease of sinuses was very often overlooked, especially in children, in whom it was much more common than was generally supposed. It should not be too readily concluded that the discharge in a child's nose was due to adenoids. A careful examination, if necessary by proof-puncture, which was an easy procedure even in quite young children, would often elicit the presence of antral suppuration.

ERRATUM.—In our report last week of a discussion on the Medical Aspects of Hæmaturia in the Section of Urology, Royal Society of Medicine, the name of the speaker who immediately preceded Sir Thomas Horder's reply should have been given as Mr. Cyril A. R. Nitch. We regret the error.

Reviews and Notices of Books.

SURGERY OF NEOPLASTIC DISEASES BY ELECTROTHERMIC METHODS.

By GEORGE A. WYETH, M.D. With a Foreword by HOWARD A. KELLY, M.D. Baltimore. New York: Paul B. Hoeber, Inc. 1926. Pp. 298. $7.50.

IN this interesting monograph Dr. Wyeth gives an account of the electrothermic methods in surgery and describes his own experience in their use for the treatment of neoplastic diseases. The electrothermic methods are those in which heat, generated in the tissues by high-frequency oscillatory currents, is used for the excision or destruction of abnormal tissue. Of these methods that which is most familiar to workers in this country is the treatment known here as diathermic coagulation or cauterisation. Dr. Wyeth describes two other methods. In one of these the heat generated by the current is insufficient to coagulate the abnormal tissue; instead, it deprives the latter of water and dries it. This method was originally described by Dr. W. L. Clark, of Philadelphia, and named by him "electrodesiccation." It does not seem to have been adopted in this country, although it is widely practised in the United States. In the third method an oscillatory current is used to cut tissue and play the part of a scalpel; in addition, the current coagulates the divided surfaces to a slight depth and seals the minute vessels. This method has been perfected by Dr. Wyeth and practised by him during the past five years. The first three chapters deal with the history of the medical uses of high-frequency currents, the production of these currents, and the question of terminology. Dr. Wyeth prefers the term "endothermy" to surgical diathermy, and he calls diathermic coagulation "bipolar endothermy." Electrodesiccation he prefers to call "monopolar endothermy," because a single (active) electrode is used without an indifferent electrode. The use of the oscillatory current for dividing tissue is termed "treatment by the endotherm knife" by Dr. Wyeth, the endotherm knife being the active electrode.

In the fourth chapter the author describes the principles of monopolar endothermy, indicates its uses, and describes some cases which he has treated by this method. In Chapter V. the subject of bipolar endothermy (diathermic coagulation) is treated in a similar manner. The remaining five chapters, which constitute about three-quarters of the entire book, deal with treatment by the endotherm knife. The idea of utilising high-frequency oscillatory currents for cutting tissue did not originate with Dr. Wyeth, but he has perfected the method, devised special apparatus for generating the most efficient current for the purpose, and obtained a lengthy experience in its use. He employs a single needle as the active electrode (the endotherm knife) and uses it for the excision of malignant and innocent neoplasms of the skin and of the mucous membranes of the upper air passages, rectum, bladder, and female genitalia. The amputation of the breast and removal of the axillary glands by its means is described. The details of a case of carcinoma mammæ are given; the diagnosis of adenocarcinoma was made by histological examination, and the breast, pectoral muscles, and axillary glands were removed by the endotherm knife. There was no evidence of shock after the operation and the patient was out of bed on the third day. There seems to be little doubt that the employment of the oscillatory current for cutting tissue furnishes the surgeon with additional power, especially in the treatment of malignant disease. Although it does not stop the escape of blood from the vessels of appreciable size, the capillaries and lymphatics are sealed as they are cut. Hæmorrhage from larger vessels is stopped by securing the divided ends in pressure forceps and coagulating them by the diathermy current. Incisions made by the cutting current heal by first intention, and there appears to be little or no shock after the operation. Dr. Howard Kelly, who has written a foreword to the book, has adopted the new method and states that it "bids fair to effect an extensive readjustment of our whole surgical technique." There is much in Dr. Wyeth's book that will interest the student of neoplastic disease. It is stated that the compilation of cancer statistics and the description of results of treatment are of limited value unless they are accompanied by information regarding the degree of malignancy, derived from histological structure and the degree of differentiation of the cells. Four grades of malignancy are described. Dr. Wyeth speaks highly of the value of electrodesiccation in the treatment of leukoplakia. An interesting case of epithelioma of the eyelid treated by the same method is described; ectropion did not occur and there was no recurrence in 18 months.

The book is deserving of careful study and the author has conducted original work of no little value. The illustrations are good and the diagrams helpful.

HIGH VACUA.

By G. W. C. KAYE, O.B.E., M.A., D.Sc., F.Inst.P., Superintendent of the Physics Department the National Laboratory. London: Longmans, Green and Co., Ltd. 1927. Pp. 175. 10*s.* 6*d.*

THE first five chapters of this book are devoted to a consideration of early types of exhaust pumps and the technique of how to deal with a vacuum when it appears, one chapter being devoted to the question of sealing metals to glass. Then comes a section on the modern pumps with their high speed action, good illustrations and descriptions of many types being given. A brief chapter is devoted to absorption methods of exhaustion, the best of which is that discovered by Sir James Dewar—namely, the absorption of charcoal at the temperature of liquid air. In many cases a good oil pump combined with the charcoal and liquid air absorption gives very speedy action. The final chapters are devoted to a description of how high vacua are measured, and how the speed of action of pumps can be determined.

The book should prove useful for reference purposes, since the original publications in which the separate inventions are described are nearly always mentioned.

REGIONAL DIAGNOSIS IN BRAIN AFFECTIONS.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. By ROBERT BING, Professor in the University of Basle. Third edition, translated from the sixth German edition by F. S. ARNOLD, B.A., M.B., B.Ch. Oxf. London: William Heinemann (Medical Books), Ltd. 1927. Pp. 204. 15*s.*

Dr. Robert Bing's compendium is now so well known to English as well as continental students that further recommendation is almost superfluous. On various occasions we have reviewed it in these columns, and need therefore say no more than that this third English edition can be put with confidence into the hands alike of student and practitioner; it embodies in readily assimilable form present-day teaching in regard to neurological diagnosis. The basis of clinical neurology is the anatomy and physiology of the nervous system, without which the study of nervous disease is vain and at the same time uninteresting. With it, cases become illuminated and therapy less empirical. If this introduction is utilised as it deserves to be it cannot fail to provide the physician with a working knowledge of neural mechanisms in health and disease that he can apply to clinical practice with advantage to himself and correspondingly to his patients. The clarity and simplicity of the numerous diagrams enhance the value of the text. Incidentally, we note that the German legends in some of the illustrations have undergone translation, but not in all.

WALL-MAPS OF THE C.N.S.

Bilder zur makroskopischen Anatomie des Gehirns und zum Bahnenverlauf; Erläuterungen zur 2 Auflage der Icones Neurologicæ. By V. STRÜMPELL und JAKOB. Edited anew by FRIEDRICH MÜLLER and HUGO SPATZ, Munich. With 45 illustrations. Munich: J. F. Lehmanns. 1927.

WE have received a new series of the Icones Neurologicæ or wall-maps of the central nervous system, designed for teaching purposes in schools of anatomy and neurology. A small explanatory brochure accompanies them, with reproductions of the maps on a much reduced scale and appropriate textual explanations. The wall-maps are admirable alike for their relative simplicity and for the distinctiveness of their colourings, and as far as we have noted critically their accuracy is unimpeachable. The terminology, as is just, is Latin. Any teaching school possessing these Icones can congratulate itself on a labour-saving acquisition of a most valuable kind.

CHILD WELFARE.

The Health of the Child of School Age. By Various Authors. With a foreword by Sir THOMAS OLIVER, M.D., F.R.C.P. London: Humphrey Milford, Oxford University Press. 1927. Pp. 204. 6*s*.

THIS book consists of a series of 10 lectures recently delivered to the public at the Institute of Hygiene. All the writers are authorities on the subject with which they deal, and the lectures, taken together, form a valuable introduction to the problems of school children's health. To mention a few chapters only, the prevention of nervous disorders is discussed by Dr. Risien Russell, Dr. L. R. Lempriere deals in a most scientific and convincing manner with the dietetic problems of a school, and Dr. C. E. Shelly brings out many points of interest on the incidence of infectious disease. The other articles maintain their interest throughout, and the book should be of real benefit to parents and to schoolmasters, particularly in enabling the former to obtain a sympathetic understanding of the difficulties with which the headmasters are often confronted.

Nutrition Work with Children. By LYDIA J. ROBERTS, Assistant Professor of Home Economics, University of Chicago. University of Chicago Press. 1927. Pp. 394. 17*s*. 6*d*.

THIS book gives an account of the theoretical and statistical aspects of nutrition in childhood, and of the work which has been done in American schools in investigating malnutrition and in educating the public on this subject. Various methods of measurement and standardisation are discussed, and a description of the Pirquet system is given. It will probably appear to the medical reader that the influence of alimentation on the body-weight is over-estimated, while that of endocrine activity is entirely neglected. An interesting account is given of attempts which have been made to educate school-children in the selection of their own diets. As applied to normal children, the methods employed should be of considerable value, but it is doubtful whether cases of true malnutrition are best dealt with by so uniform a régime, and whether the author's enthusiasm for increasing the milk allowance of *all* these children is not misplaced.

JOURNALS.

THE JOURNAL OF INDUSTRIAL HYGIENE for April contains two articles of some moment. In the first Dr. W. Watkins-Pitchford deals with silicosis as seen among gold miners and changes produced in it by legislative and administrative efforts, summarising his work at Johannesburg over many years. Silicosis is the name now given to miners' phthisis, as indicative of the origin of the disease which also attacks other workers exposed to silica dust, such as stonemasons, metal grinders and potters; it will also attack the ordinary population in a country of dust storms composed of silica particles. Dangerous particles of silica dust vary in size from 0·25 to 10 microns; larger or smaller particles are not phagocytosed by macrophage cells, which also engulf tubercle bacilli. Silica dust causes fibrosis in the lungs, which condition may lie latent for some years to be precipitated by an infection. Shortness of breath and a tendency to obesity indicate the inception of silicosis, which, by itself, is seldom serious. Pulmonary tuberculosis and silicosis are intimately related one helping the other, and when associated are far more fatal than either alone. Pigmentation of the lungs always accompanies silicosis and precedes the formation of grey fibrous tissue in nodules. The presence of fibrous nodules can be detected by radiography, which is more accurate than clinical examination. When tuberculosis is superadded, the heart shadow takes on the asthenic or vertical type. The average time for simple silicosis to develop in a Rand miner is now about 10 years, which is longer than before steps were taken to minimise the dust hazard and is inversely proportional to the intensity of exposure to silica dust. Great necessity exists for more rigid exclusion from underground of all possible sources of tuberculous infection; to-day native labour supplies such a possible source. Natives when employed as long as Europeans exhibit the same tendency to develop silicosis but are far more prone to acquire simple tuberculosis. Three stages in the disease, ante-primary, primary, and secondary, are recognised for compensation purposes, according to the presence of impaired capacity for work and of tuberculous infection. The precautions adopted by mechanical means to suppress the dust hazard and by medical means to exclude the predisposed and early cases are described, and the favourable results attained are explained. The struggle against miners' phthisis on the Rand as here told makes an interesting story.—In the second article Dr. W. I. Urquhart reports a series of experiments on animals to ascertain how death is produced by electric shock. Apparently death may be due to primary cardiac failure, or to primary respiratory failure, or to a combination of both. The current applied to the brain causes, by intense stimulation, generalised muscular contraction; when it is broken, a condition of profound paralysis or block follows in the respiratory, vagus, and vasomotor centres. No histological destructive changes are associated with the block, which may pass off if life is maintained by effective artificial respiration until reflexes and the normal rhythmic discharge of respiratory impulses return. Much, however, depends upon whether gross damage has been done to the brain or spinal cord by charring at the point of application of the electrodes. The conclusion is drawn that, in cases of unconsciousness after electric shock, artificial respiration should be continued until there is evidence of death in cooling of the body or in the onset of rigor mortis.

Reports and Analytical Records.

BOTTLED PALE ALE.

(MATTHEW BROWN AND CO., LTD., THE BREWERY, PRESTON.)

THIS ale was remarkably brilliant, free from any deposit, and the condition and palate left nothing to be desired. The brewing operations obviously had been carried out on sound lines and before being bottled the beer was filtered and carbonated. On analysis the following results were obtained:—

Specific gravity of wort before fermentation		1045·4°	
Present specific gravity		1008°	
Alcohol by volume		4·8	per cent.
Extractives (total soluble matter)		3·83	,,
Consisting of	Mineral matter	0·32	,,
	Protein	0·39	,,
	Carbohydrates, &c.	3·12	,,
Acidity as acetic acid		0·11	,,

The ale is free from added sulphurous acid and other preservatives.

THE LANCET.

LONDON: SATURDAY, MAY 14, 1927.

THE EMPLOYMENT OF MARRIED WOMEN

THE Married Women (Employment) Bill, which came to an untimely end in the House of Commons on April 20th, was of interest to the medical profession from at least two direct points of view. It concerned a large number of medical women now engaged in Government and municipal service on contracts which terminate automatically with marriage, and, further, the arguments which secured its rejection were mainly of a medical character. Both the mover and seconder of the motion for rejection made great play with the disabilities of pregnancy which they appeared to consider not only the natural, but the inevitable, result of marriage. One speaker even declared that "in normal cases a woman was not as efficient a few years after marriage as before," and reminded us portentously that the sexes were not equal in all respects. The Government spokesman, Mr. RONALD MCNEILL, elaborated the same point, and complained that supporters of the Bill were increasing "enormously" the sickness risk and the risk of discontinuance of service by employing married women, with a corresponding "immense loss" of efficiency. The one medical speaker in the debate, Dr. GRAHAM LITTLE, found himself unable to support these gloomy prognostications and, stating that he knew of no medical authority for the arguments used, told the House that the universities of this country had found it perfectly practicable to make no distinction whatever between the sexes in the matter of marriage. But he implied, and correctly, that data concerning the sickness-rates of married women, as compared with single women and men working under similar conditions, are very hard to obtain.

In the days when the largest educational authority in the world gave women teachers the free choice of remaining after marriage,[1] it was found that the number of days absence for married women was 9·3 per annum, as against 8·2 for single women and 4·6 for men. It may be noted that the differential rate against married women was found exclusively at the lower and upper extremes of age, for between 30 and 55 years of age married women actually showed less absence than single. As for interruptions due to pregnancy, the last census revealed that the average number of children in the professional man's family was 0·98. The married woman Civil servant might well contribute double her quota of disability without seriously dislocating the work of a well-organised department. The bogy of the woman official handicapped by recurrent pregnancies and a "lot of little children" need not be taken too seriously. It was found in the teaching profession that very few women with more than two children attempted to remain at work, and medical women in a similar situation commonly give up practice, at any rate, until the children are at school. Mothers are at least as aware of what is due to young children as are Members of Parliament. Even if it could be established that a substantially greater sickness risk has to be debited against the married women, it by no means follows that the last word has been said on the efficiency of the woman as worker. Marriage has been described as a "battlefield"; it is certainly an education, and anyone can imagine that this education may often be an asset. This is especially true of positions where the woman official has to deal with other wives and mothers in some educational capacity, either as a teacher or in the public health service. Working women not unnaturally prefer to deal with one of their own status on matters affecting married life, and they listen more readily to advice in respect of children from a woman who has, or who might have had, children of her own. Such an attitude on the part of a large proportion of the public is not a negligible factor in the conduct of great services which ultimately depend for their success on the coöperation of the public. It may further be argued that working mothers are not the only persons who would benefit if the atmosphere of some schools and departments staffed by single women, which tends to be too spinsterish, were mitigated by a leavening of the mated.

The point of view of the woman herself was well put in the debate by Mr. PETHICK-LAWRENCE. He spoke feelingly of the sad waste entailed on both sides when an expensively trained and experienced officer suddenly found herself thrown out of employment and deprived of pension rights just at the time when the most valuable earning period of her career was beginning. This is an aspect which closely concerns medical men who have given their daughters a costly education for which they and the community are entitled to expect some return. Recently the Durham County Council has dismissed a woman medical officer, appointed last August, on the sole ground that she has since married, no question of resignation on marriage having arisen at the time of her appointment. This sort of prophylaxis against possible inefficiency can hardly be defended. In other departments of life a married woman is now at liberty to use her gifts in any manner she and her husband please, and (as Sir HENRY SLESSER suggested) it is difficult to see why the established services should remain the one exception. When the matter next comes before the House it is to be hoped that broader and more scientific views will prevail.

[1] J. V. Hart: Sickness Data of Elementary School Teachers in London, 1904–19. Journal of the Royal Statistical Society, 1922.

THE ENDOTHERM KNIFE.

BLOODLESS surgery was the expression formerly applied to the manipulation of bones and joints under anæsthesia, no incision being made in the skin. The term has made a wide appeal to the public, whose dread of "the knife" is largely due to an imaginary picture of an operating theatre, based on observation of the mass of blood that may well or spurt from a single accidental cut. It practice the amount of blood lost by the patient under a modern surgical team is surprisingly small, and if primary hæmorrhage under these conditions does the patient any harm it is only by prolonging the period of anæsthesia. For even with the most efficient swabbing and clamping the surgeon's field of vision may be temporarily obscured by oozing, and if hæmatomata are to be avoided the time spent in ligaturing small vessels is not negligible. For these reasons alone a technique promising a bloodless field of operation is to be welcomed; if, as is claimed by its exponents, it has also other signal advantages,

such as the promotion of healing by first intention, and the sealing of lymphatics and very small vessels in the very act of incision, it certainly deserves the attention of surgeons. The technique to which we refer is the alternate use through the same electrode —a needle mounted on a hard rubber or fibre handle, known as the endotherm knife (G. WYETH) or the acusector (H. A. KELLY)—of an undamped high-frequency (H.F.) current for division of the tissues, and a damped H.F. current to secure hæmostasis of the larger vessels.

A brief excursion into nomenclature is desirable if the relation between these methods and the older electro-cautery is to be understood. At present the word diathermy is often used indiscriminately to indicate medical diathermy, where the aim is to warm the tissues to a point short of destruction, or surgical diathermy, which includes the various methods of adapting the high-frequency current to disintegrate or destroy animal tissue. These methods, whereby heat is generated within the tissues in response to the oscillations of a H.F. current, differ radically from the transmitted heat given out by the electric or galvano-cautery, the Paquelin cautery, and the Percy cautery. The effect of the transmitted heat is to cauterise or burn the tissues, the heat being generated in the applicators which are hot when applied. The sharp-pointed active electrode carrying H.F. current, on the other hand, is always cold when applied, and the heat generated in the tissues themselves does not char or burn. It can, however, be used to destroy by desiccation, to destroy by coagulation, or to incise by cellular disintegration. Dr. G. WYETH, in a book which we review on another page, suggests that the term diathermy shall in future be used only in the sense of medical diathermy, while the term endothermy (heat from within) shall be used to include (1) monopolar H.F. used for desiccation; (2) bipolar H.F., used for coagulation; and (3) the endotherm knife, being a H.F. oscillatory current produced by means of a triode which, when making contact with the tissues through a mounted needle, produces a cutting effect, sealing lymphatics as it cuts. The method of electro-desiccation is applicable to a wide range of superficial lesions, including malignant ones which do not involve the deep tissues, and also warts, moles, nævi, and pigmented areas. Dr. W. L. CLARK first described the technique as long ago as 1911.[1] He started from the axiom that since the effect of heat on animal tissues ranges from simple hyperæmia to charring, there must be between those extremes a point where desiccation of the tissues would take place. His idea was to produce, control, and sustain a degree of heat sufficient to cause a rapid desiccation of the part to be treated, sterilising it and converting it into an inert mass. His experiments on cakes of soap—drying a marked area to pulverising point without charring or discolouring the paper in which it was wrapped, and without drying the soap in the surrounding areas—led to others on potatoes and on raw liver, and, finally, to a successful use of the monopolar damped H.F. current on superficial lesions in human subjects. For deeper lesions bipolar endothermy may be used; the heat is generated by connecting one pole of the apparatus to a wet, indifferent electrode under the patient's buttocks, the operator making contact with the active electrode. The d'Arsonval current used is of comparatively low-voltage and high ampèrage—200 to 5000 milliampères—and a deep penetrating coagulation results. It is claimed that secondary hæmorrhages rarely occur in experienced hands, but operators working near a large vessel are advised to ligature it in advance.

The third type of endothermy, using Dr. WYETH'S classification, is the one to which we wish to draw special attention. H. A. KELLY and G. E. WARD[2] report excellent results in the surgery of carcinoma of the breast from the use of the endotherm knife devised by Dr. WYETH. This is not a true knife, but a current operating through the same type of needle as is employed for the application of bipolar damped high-frequency currents. The underlying principle of its action is the application of undamped high-frequency current, which causes a cellular disintegration of the tissue at the point of contact, an arc being formed between the tissue and the tip of the needle which is held just over it. This introduces a new technique which is not easy to acquire, the impulse to make some pressure, as in using the scalpel, being difficult to resist. The exponents of this technique claim that there is healing by first intention, an immediate closure of lymphatics, capillaries, and small blood-vessels, and a diminution in the risk of local recurrence. The number of clamps and ligatures necessary during an operation is considerably reduced and in some cases may be entirely eliminated, for in order to seal the larger blood-vessels, which are clamped in the usual manner, the current is switched over to damped high frequency and a short application made to the clamp controlling the vessel. The measure of the duration and amount of the current to be applied is a slight ring of coagulation at the point of the clamp. This procedure is said to be quicker and just as efficient in stopping hæmorrhage as is the tying of a ligature. KELLY and WARD warn the surgeon that the current used in the endotherm knife, which they prefer to call the acusector, causes muscular contractions when applied to nerves or muscles, but such contractions can be made almost negligible by reducing voltage according to directions given. The coagulating current must also be used with the utmost caution near a muscle. The great advantage of the combined use of the two forms of current is that, since so few ligatures are required, the operator need hardly ever touch the wound with his hands. The necessity for having coagulation high-frequency current at hand during the operation led Dr. WYETH to design the endotherm,[3] an instrument equipped for the production of currents used in monopolar and bipolar endothermy and in operations with the endotherm knife. The undamped high-frequency oscillations are developed by means of a triode oscillation, the grid and anode circuits being coupled together and timed to a frequency of approximately 1000 kilocycles. Very few details of the undamped high-frequency apparatus are set out in Dr. WYETH'S original description of the apparatus or in his book, a disappointing omission since doubtless many surgeons will be anxious to investigate the possibilities of the combined method, without having to instal an expensive complete equipment when their existing damped high-frequency apparatus could be modified and extended to function for the use of the endotherm knife. In this connexion it may be noted that an error has crept into the diagram of the electrical connexions of the triode oscillation found on p. 30 in Dr. WYETH'S book; if followed out it would lead to a considerable display of fireworks. The success which has already attended

[1] New York Med. Jour., 1911, xciii., 1131.

[2] Annals of Surgery, Part 397, January, 1926, p. 42.

[3] American Journal of Electrotherapeutics and Radiology, 1924, xlii., 186.

the use of the endotherm knife in certain operations leads us to hope that further investigations will be carried out in this country. There is especial need for the correlation of the wave form of the high-frequency oscillations and the resulting changes produced in the various types of tissue cells. Apart from the destruction of neoplastic growth, the desirability is obvious of pursuing investigations into a technique by which no drop of blood is spilled. "Prepare thee to cut off the flesh," said Portia, "Shed thou no blood." It would seem that we are approaching an era of surgery when Portia's dictum will not be accepted as a conclusive argument.

BRONCHIECTASIS.

THE discussion on bronchiectasis at the Royal Medico-Chirurgical Society of Glasgow reported in another column illuminates a number of issues upon which physicians and pathologists alike are still in doubt. Sometimes we may feel inclined to wonder if our knowledge of this obstinate and unpleasant disease is advancing at all. The treatment of the malady has certainly not made rapid strides, and the new major operations of surgery—thoracoplasty, and the like—have not been attended with that measure of success which has been noted in similar operations for pulmonary tuberculosis. Perhaps such success was hardly to be expected. The disease is usually far advanced when the patient reaches the surgeon and the whole field of operation is saturated with the organisms of suppuration from which the numerous pleural adhesions are generally not exempt. It is clear, therefore, that if radical measures are to be adopted earlier diagnosis is essential, and along this line, at any rate, some advance has been made with the introduction of lipiodol. The technique of this diagnostic measure is safe and easy, and there is reason to believe that the employment of the substance will go far to increase the value of diagnosis. It presupposes, of course, the possession of an up-to-date X ray plant and a skilled technician to use it, and like so many of the modern diagnostic methods, it adds yet another demand for increased facilities for the institutional diagnosis and treatment of disease. But even with this addition to our armamentarium we are still faced with many problems in the causation of bronchiectasis. At the discussion in Glasgow Dr. JAMES ADAM mentioned the cases traceable to nasal sinusitis, a group not generally recognised in this country though described in American literature, whilst Prof. LEONARD FINDLAY, quoting Prof. ARMAND DELILLE in support, emphasised the difficulties of those cases in childhood which had symptoms but no signs, or even a complete absence of either. There is abundant evidence, indeed, for recognising non-tuberculous fibrosis of lung in childhood as the starting-point for many of these cases, and physicians who work in chest hospitals not infrequently have the mortification of watching cases of fibrosis of lung in children slowly going downhill from fibrosis to bronchiectasis without any clear line of demarcation and without being able to call a halt in the disease. It seems unjustifiable to resort to drastic surgical measures as long as the condition is merely one of fibrosis and once sepsis—in other words bronchiectasis—has become established surgical aid may well be too late. Probably, however, only a certain proportion of these cases of fibrosis go on to bronchiectasis, and it would be a great boon if we knew definitely what was the deciding factor. Meanwhile it is essential not to confuse the cases with pulmonary tuberculosis, but to watch carefully for the insidious onset of any signs of pulmonary sepsis which undoubtedly spell bronchiectasis. Children can be taught not to swallow their sputum, and the frequent bacteriological examination of their expectoration should never be neglected. In the late stages the onset of lardaceous disease seems to be a landmark in the slow progress of disease not infrequently overlooked; frequent examinations of the urine would appear to be just as important as sputum tests. On the morbid anatomy side of the picture we are inclined to think that the frequency of cerebral abscess as a complication of bronchiectasis has been exaggerated. Of much more importance is the frequency with which a full bronchiectatic cavity is mistaken for an empyema, often with disastrous surgical results. The histological picture of bronchiectasis, too, is essentially disappointing. By the time these long-standing cases reach the post-mortem room all hope of elucidating any satisfactory information as to causation has long since passed. In conclusion, therefore, we have frankly to acknowledge that although there are some recent signs of advance in knowledge, notably in the matter of lipiodol, the condition of bronchiectasis has not been a conspicuous example of the advance of modern medicine, especially as regards the purely medical group of cases. That the purely surgical variety of the disease, associated with a traumatic factor or foreign body, is a separate entity requiring separate consideration was well brought out in the Glasgow discussion.

JOHN LYDEKKER.

A SMALL book written by Mr. W. R. Dawson and published by the Seamen's Hospital Society tells the story of a great hospital benefactor. John Lydekker, merchant of London and shipowner (1778–1831), had almost as great an influence on this Society as would entitle him to the prayers usual on behalf of a pious founder. His father left New York when it ceased to be an English colony and brought his children to London. Here the eldest son was at one time an eminent physician, and the third son, John, became a merchant in Cheapside, concerning himself mainly with cane and whalebone, then wanted for corsets and the ribs of umbrellas. Naturally he took an interest in whaling ships in the South Seas, and he owned four in 1829. In 1830 he made a handsome donation to the Seamen's Hospital in recognition of their kindness to some Polynesian seamen from his ships. In those days, less than a hundred years ago, life in London was much less secure than now; water was often drawn from shallow, contaminated wells, drainage was by open sewers to the Thames, burials were apt to be made in the crypts of churches to avoid the resurrectionists. In July, 1832, Lydekker went from his house in the Strand to stay with a friend in Fenchurch-street, fell sick of cholera which was then prevalent, and feeling himself near his end, wrote out a short will which he signed, leaving the residue of his property to the Seamen's Hospital Society. This will, although unwitnessed, was not contested by his family, and brought the Society a sum of £58,729. At that time the Seamen's Hospital was situated in the 104-gun ship *Dreadnought* lying in the Thames off Greenwich, but in 1870 a 99-year lease of the old infirmary of Greenwich Hospital was acquired, and in 1926, with the help of the Lydekker bequest, £23,000 left by B. T. Crichton, and other benefactions, patients to the number of 28,264 were treated in one or other of its eight establishments. The Seamen's Society owes many of its opportunities of usefulness to the munificence of shipowners, of whom Lydekker was the most bountiful. There is a marble monument to his memory at Lloyds and a stained glass window in the chapel at Greenwich.

Annotations.

"Ne quid nimis."

THE DEVELOPMENT OF MENTAL HOSPITALS.

CIRCULARS have been sent out by the Royal Medico-Psychological Association to every mental institution in England inviting the medical superintendents to afford to their staffs facilities for attending clinical meetings in accordance with a plan whose organisation is now under consideration. It is proposed that these meetings should be held under the auspices of the Association, and to encourage the attendance of the workers in psychiatric establishments the managing bodies will be asked to sanction travelling and other reasonable expenses to their medical officers. The movement is in accordance with the expressed wishes of the Boards of Control in England and Wales, and in Scotland. The circular suggests that the clinical meetings should not be limited to members of the Association, but that all medical men, institutional officers, or private practitioners should be made welcome, and there can be no doubt whatever of the value of such a departure. Such meetings would stimulate psychiatric work and further the better treatment of cases of mental disorder to the benefit of the patients and to the instruction of the profession in directions of particular value for the conduct of practice. A memorandum on the subject issued by the Association expresses the hope that there may be 12 meetings a year in each of certain areas whose size remains for decision, and that a special point at these meetings should be made of the study of groups of cases presenting similar symptoms. All will agree with the implication that the demonstration of actual cases at clinical meetings is more instructive than the reading of papers, and the scheme does not depend for success upon securing large attendances; small gatherings at which interchanges of personal experience can take place should give better results than crowded meetings. The existing plan of the Association will need dividing into areas in accordance with the number and situation of the mental hospitals, but the actual scheme has not yet been formulated, and for pecuniary reasons the support of the local authorities will be required, for it is unreasonable to expect the medical staffs of the institutions to finance a great education design as well as provide for its scientific and practical working. The most valuable result of such a scheme would be the relief from isolation of many medical institutions. Mental hospitals lack public sympathy and support, and fall easy victims to misrepresentation because much of their work is necessarily isolated. But though they can never be entirely open institutions, it is quite misleading to describe the insane as being treated "behind shut doors." This is well shown in an impressive plea for the fuller coöperation of the public in the life of psychiatric institutions written by the President of the Royal Medico-Psychological Association in aid of the National Council for Mental Hygiene.[1] Lieut.-Colonel J. R. Lord points to the good results which would follow upon the appointment of independent, unofficial, and voluntary mental hospital visitors as an intermediary between patients and their homes, and all who have studied the problems concerned will agree with him that an organisation of such visitors would be a powerful agency both for science and humanity.

KRUKENBERG TUMOURS.

AT a recent meeting of the North of England Obstetrical Society Prof. Blair Bell, who showed three cases of Krukenberg tumour in women aged 35, 42, and 32, remarked that these tumours, which were originally described by Krukenberg as primary sarcoma carcinomatodes of the ovary, were now invariably regarded as secondary to gastric or possibly intestinal carcinoma, as was exemplified in his own cases. Similar views are expressed by Dr. Julius Jarcho,[1] attending gynæcologist and obstetrician to the Sydenham Hospital, New York City, who records seven cases which he had studied at the Szvent-Istvan Hospital, Budapest. Three of his patients were operated on for tumours of the adnexa, the material removed showing metastatic ovarian tumours. In two of the three the necropsy revealed gastric carcinoma, while the third patient was lost sight of. In the four remaining cases the ovarian tumours were not discovered until the necropsy, and like the other two were found associated with primary gastric carcinoma. Of the four gastric carcinomata in which a histological examination was made three consisted of solid groups of epithelial cells, some of which showed mucinous changes, while one carcinoma was fibrous and showed no mucinous transformation. On naked-eye examination the ovaries in all the cases showed typical uniform enlargement with preservation of the normal shape. The cut surface was generally solid, except for a few discrete cysts. In some areas the solid tissue appeared gelatinous. Histologically, the tumours presented the usual Krukenberg structure, signet-ring cells being arranged loosely or compactly between connective tissue rich in spindle-shaped cells. Two of the ovarian tumours showed irregular gland-like structures resembling adenocarcinoma but in transition, with groups of signet-ring cells. Evidence was found that the gastric carcinoma had been propagated by retroperitoneal lymphatic channels. Dr. Jarcho comes to the conclusion that, in the formation of these ovarian tumours, propagation through the lymphatics plays an important part, whereas propagation along the blood-vessels and implantation are of decidedly less moment.

FOOD HANDLERS.

SHORTLY after the war, when new sanitary regulations were being issued,[2] the opportunity was taken to include measures to prevent the spread of infection through the handling of food by persons carrying the germs of dysentery and enteric fever. More recent regulations[3] require that no person who is aware that he is suffering from tuberculosis of the respiratory tract shall take up employment in connexion with a dairy which would involve the milking of cows, the treatment of milk, or the handling of vessels used for containing milk; they also give the local authority power to secure the dismissal of any such person already employed if he is in an infectious state. It has been suggested that much could be done towards achieving the object of these latter regulations if employers in the milk trade, before engaging an employee, required the production of a recent medical certificate stating that the physical condition of the applicant for employment was such as to satisfy the requirements. Some local authorities have accordingly made arrangements for the necessary examination to be made free of charge by their tuberculosis officers. The medical examination of food handlers has been taken very much further in the United States of America, where Dr. M. James Fine, Director of the Tuberculosis Division, Newark City Department of Health, New Jersey, has recently reported[4] on the examinations of food handlers conducted in that city of about half a million inhabitants. The work was started with restaurant employees, and has gradually extended, until at the present time, grocers, confectioners, delicatessen-store workers, and milk handlers are examined. Owing to the absence of positive results, the routine examination of nose and throat cultures was discontinued in 1926; cultures are only made

[1] Mental Hospitals and the Public. Adlard and Son. 1927. 1s. 6d.

[1] American Journal of Obstetrics and Gynecology, March, 1927.

[2] Public Health (Pneumonia, Malaria, Dysentery, &c.) Regulations, 1919. See THE LANCET, 1919, i., 281.

[3] Public Health (Prevention of Tuberculosis) Regulations, 1925.

[4] Public Health Reports of the United States Public Health Service, March 25th, p. 799.

now if considered necessary after the examination of the throat. Widal tests for typhoid fever have been discontinued for the same reason. The figures given relate to the years 1920-25, during which 32,188 restaurant employees and 9869 milk dealers were examined; of all those examined, 155 were rejected by the health department for tuberculosis, and 45 for venereal disease. Temporary cards were issued to 95 persons who had tuberculosis or venereal disease, but whose condition was not active. Although the examination is compulsory, probably those food handlers who came to the diagnostic clinic were persons who felt reasonably certain that they were free from the evidence of communicable diseases; this self-selection undoubtedly had some influence in keeping down the percentage of tuberculous and venereal diseased individuals among those examined. Considerable stress is laid upon the importance of the examination being made by physicians specially appointed to do this work; obviously it relieves the private doctor of the responsibility of taking away his patient's employment. Dr. Fine comments upon the small number of food handlers rejected by private doctors in Newark, Kansas City, and New York City. In Newark itself there have been fewer rejections each year since 1920; this may be taken as an indication that as persons with tuberculosis or venereal disease know that they will not be certified fit for employment as food handlers, they secure other occupations. Dr. Fine concludes his interesting survey by summarising the arrangements made for the examination of food handlers in other countries, which he finds very inadequate.

CREMATION AND DEATH CERTIFICATION.

A CIRCULAR letter will be addressed shortly to the medical profession by the Cremation Society of England, signed by the Chairman of the Society, Prof. Chalmers Mitchell, Sir Thomas Horder, and Mr. Herbert T. Herring, honorary secretary of the Society, in which it is pointed out that certain reforms are necessary in the interests of the medical profession as well as of the public in respect to the disposal of bodies by cremation. The Births and Deaths Registration Act, 1926, comes into force next July, and imposes upon the medical practitioner important public duties, without remuneration in the case of burial, but in the case of cremation procedure is controlled by separate regulations. These regulations, which are laid down by statutory rules and orders under the Cremation Act, 1902, enact (under Form B) that the body must be seen and identified after death, and the fact of death certified by the registered medical practitioner who attended deceased in the last illness and who can certify the cause of death. This service is remunerated as a rule with the fee for an ordinary professional visit. But in disposal of the body by cremation a second medical certificate (under Form C) must be given, in which the identity of the deceased, the fact of death, and other particulars—verifying the answers set out in Form B—must be given either by an independent medical practitioner, of not less than five years' standing, who has been appointed by the cremation authority for the purpose, or, if such an appointment is not made, by a practitioner of five years' standing who holds one of the following appointments: medical officer of health, police surgeon, certifying surgeon under the Factory and Workshop Act, 1901, medical referee under the Workmen's Compensation Act, or who is physician or surgeon to a public general hospital containing not less than 50 beds. It is to the circumstances connected with Form C that the circular letter refers, pointing out that the medical man signing it ought to receive fair remuneration. The Cremation Act requires the form to be signed by medical practitioners of five years' standing, either appointed by a cremation authority or being the holders of certain public appointments, and the Cremation Society desires to bring before the medical profession the necessity of increasing the opportunities of the cremation authorities to use their power of appointment. Cremation is slowly becoming more frequent in this country, where it has always been advocated by an influential section of the medical profession, so that it is reasonable for the Society to invite the attention of general practitioners to their opportunity of collaboration. The remuneration suggested by the Society for certificates under Form C is "the usual fee for a first professional visit," and the direct object of the circular letter is to invite doctors to communicate with the Cremation Society and signify willingness in such circumstances to sign these confirmatory medical certificates required by the Cremation Act. Lists can then be furnished to the cremation authorities, who will know where to turn in making their appointments, and who will be expected to recognise the responsibility incurred, and to make their selections accordingly.

PULMONARY INFECTION FOLLOWING OPERATION.

IT is not always realised how useful is a patient's ability to cough, and thus expel infective material from the lungs and bronchi. If (as is said) there is always some inhalation of septic secretions during anæsthesia, then a patient's liability to post-operative pneumonia depends on the degree to which his power of coughing is conserved. An estimate of this power might therefore be some guide to whether there was a likelihood of his contracting the complication. Such an estimate is not impossible, for the efficiency of a cough depends on the depth of the initial inspiration and the force behind the succeeding expiratory effort—which is derived almost entirely from the abdominal muscles—and it is just these two factors that are estimated by measuring the vital capacity, that is to say, the maximal amount of air that can be breathed out after the deepest possible inspiration. This essentially is the argument which forms the basis of a recent paper[1] by Dr. E. D. Churchill and Dr. Donald McNeil, of Boston. They found that after operations on the right upper quadrant of the abdomen the patient's vital capacity was on the average reduced by 70 per cent. on the first day, after which a steady improvement took place, until on the fourteenth day the reduction was only 20 per cent. After clean appendicectomies and operation for uncomplicated inguinal herniæ, there was a fall of 50 per cent. on the first day, and a normal figure was obtained by the eleventh day; after non-abdominal operations no reduction was observed. This diminution in vital capacity is attributed mainly to the abdominal muscles being held in voluntary or involuntary spasm, so as to protect the injured part from painful movement, and also in part to inspiration being restricted by a tight abdominal binder; in a normal individual such a binder was found to reduce the vital capacity by 30 per cent. Other less important factors were posture, the effect of sedative drugs, and abdominal distension. In support of their findings, Dr. Churchill and Dr. McNeil quote figures given by E. C. Cutler and A. M. Hunt,[2] with whose results their measurements closely correspond. They reach the general conclusion that the chances of pulmonary complications increase as the patient's preoperative vital capacity approaches his theoretical tidal air requirement, but the evidence they give is insufficient for proof. Cases of cardiac and pulmonary disease were excluded from the series, and the height and weight of patients, though they were observed, are not recorded. The results of the investigation are what might be anticipated. A tight abdominal binder clearly limits both costal and diaphragmatic inspiration, and a full expiration is obviously impossible when the abdominal muscles have recently been incised. Other things being equal, the postoperative variations observed are probably due to variation in the stoicism of

[1] Surgery, Gynecology, and Obstetrics, April, 1927, Part I., p. 483.
[2] Arch. Surg., 1920, i., 114; and Arch. Int. Med., 1922, xxix., 449.

the patients. Postoperative pneumonia notoriously attacks the bases of the lungs, which are expanded almost entirely by diaphragmatic action. Any contraction of the diaphragm must either raise the intra-abdominal pressure or move the abdominal wall, and either alternative will cause pain in an abdominal incision. When this pain is present, movement of the diaphragm is repressed, the bases of the lungs are poorly aerated, and secretions stagnate in them, for even a cough cannot clear a portion of lung containing too little air. If this is the real reason why inflammation so often attacks the bases of the lungs after abdominal operations, the upset of balance between costal and diaphragmatic respiration is a greater danger than limitation of the power of coughing. It seems doubtful whether preoperative estimation of a patient's vital capacity will ever prove a valuable method of judging his liability to this complication.

EARLY INFANT MORTALITY.

IN a recent number of the U.S. Public Health Reports (March 18th, 1927) Dr. E. Blanche Sterling, an acting assistant surgeon in the Public Health Service, presents an exhaustive statistical study of the problem of fœtal and neonatal death. The subject is one of great moment in the United States of America, for Dr. Sterling opens her study by showing that the returns for dead births and neonatal deaths during 1924 account for 70·7 per cent. of the whole number of infant deaths in the States where precise figures are available. And, as in other countries, the neonatal death-rate in the States has not fallen at the same rate as the infant mortality-rate. Dr. Sterling brings forward evidence to show that clinical examination alone cannot be relied on to elicit the true cause of fœtal death; in many instances a post-mortem examination is needed to reveal it. Among a total of 18,634 registered dead births, in 30·2 per cent. the cause is entered under the heading "not specified or unknown," while the complications of labour, including dead births due to trouble with the umbilical cord, account for another 23 per cent. The total figures, it may be noticed in passing, include "miscarriages and abortions," and if these were omitted the percentages would presumably be still higher. In an analysis of deaths based upon autopsy the percentage of deaths from unknown cause—that is, after elimination of every ascertainable cause,—drops to 8–10 per cent., and those ascribed to complications of labour rise to 35–50 per cent. Many of the latter are due to intracranial lesions discoverable only by opening the skull. The proportion is, roughly, the same whether the figures examined are taken from American, English, or German returns. Detailed comparison is, however, barely possible owing to the wide divergences in the methods of classification adopted by different authors. This is well illustrated by Dr. Sterling in a table comparing the percentages found by Eardley Holland in this country and those of the U.S. Bureau of the Census; the former based on the results of autopsy, the latter on clinical examination only.

Causes of Fœtal Death or Still-birth.

Cause.	U.S.A. (Bureau of Census.) Per cent.	England. (Eardley Holland.) Per cent.
Complications of labour	23·1	51
Diseases or conditions of placenta and membranes	8·9	6
Prematurity (abortion, miscarriage, and premature birth)	8·2	—
Toxæmias of pregnancy	5·2	10
Malformation (congenital defects)	4·1	5
Syphilis	2·6	16
Traumatism and overwork	3·7	—
Other diseases and conditions of mother	3·1	2
Various causes	10·9	—
Not specified and unknown	30·2	10

In examining the causes assigned to neonatal deaths premature birth occupies a prominent position if clinical data alone are available. Post-mortem study, however, displaces this group from its prominent position and shows that many of these deaths were, in fact, due to complications of labour. As Dr. Sterling justly remarks: "Prematurity, ranking first in the census figures, goes down to fourth or fifth place in the autopsy group. A post-mortem examination brings to light the real cause of death in many premature infants, showing that the child did not die simply because it was premature, but that its premature birth and death were both dependent upon some other factor." The other chief causes of both fœtal and neonatal death are of varying magnitude in the different investigations, and are difficult to compare owing to the divergences of classification. In most of the American data, compiled on clinical examination only, syphilis is given a very low place, the highest being below 3 per cent. The autopsy figures for America show a considerable increase on this figure.

Dr. Sterling has collected interesting data on the possible relationship of social conditions to fœtal and neonatal deaths. The figures collected by the Children's Bureau from eight American cities suggest that the employment of the mother outside the home is unfavourable to survival in the early months of life. The infant mortality-rates for different races living in America lead the author to conclude that "early infant mortality varies with racial stock for reasons unknown." On the whole the most favourable rates are those for Italians and Russians. The report offers many other points of interest. The free reproduction of tables from various authors and the very complete bibliography render it a valuable basis for further investigation. Much of the work done hitherto remains isolated owing to lack of uniformity in the basis of classification. Until some degree of comparability is achieved any comparison of the causes of fœtal and neonatal deaths in the various countries of the world must be inconclusive.

STATISTICAL EPIDEMIOLOGY IN LONDON.

As we announced recently,[1] the London School of Hygiene and Tropical Medicine will begin advanced teaching in bacteriology and immunology this autumn, when Prof. W. W. C. Topley will take up his appointment. We are informed that Dr. Major Greenwood, who, like Dr. Topley, was originally appointed a professor in the new school from August, 1928, will also enter upon some of his duties in October of this year and will receive small groups of post-graduate students for three months' or six months' course, in general and statistical epidemiology. (Full particulars may be obtained from the Director of the School at 37, Torrington-square, W.C. 1.) Prof. Greenwood has always been encouraged by the medical department of the Ministry of Health and the Medical Research Council to receive a small number of post-graduates at the National Institute of Medical Research, where, in virtue of a working agreement between the Ministry and the Council, he carries out statistical investigations of interest to both departments. In the past year students from Berlin, Riga, and Madrid have worked with him. The method of instruction now in use is described by Prof. Greenwood in an article published in the current issue of the *Archiv für Soziale Hygiene und Demographie* (Bd. II., Heft 3, 1927) from which we quote the following:—

"My students usually begin by trying out the simplest methods of statistical calculation not upon artificial examples (ausgeartete Kunststücke) but on real data. In an official department of medical statistics there are usually data of all kinds to hand, so that the school medical officer can be given measurements of elementary school-children, the epidemiologist statistics of infectious diseases, and so on. After a week or two in which the student gains some self-confidence and learns to handle a calculating machine, tables, and the simpler formulæ, he can tackle the data which really interest him. What remains of theory must follow the rule *solvitur ambulando*. Of course, a serious student would also read a text-book and seek explanations of difficulties. Once or twice a week some particular topic

[1] THE LANCET, April 30th, p. 937.

is made the subject of a general discussion. For those who seek a wider mathematical training Prof. Pearson's Institute offers a rich choice of lectures and practical classes. Neither the National Institute of Medical Research now, nor the School of Hygiene in the future, will claim to be able to produce by this method professional statisticians. A foreigner who wishes to master the general theory of mathematical statistics must betake himself to Prof. Pearson's Institute or to Mr. Udny Yule, at Cambridge. I and my colleagues are only competent to help those who wish to employ the statistical method as a useful tool in epidemiological and public health investigations. In a word, we are not epidemiological statisticians but statistical epidemiologists."

No doubt this method will be continued by Prof. Greenwood when he formally assumes the professorial functions, and it appears to be suited to the requirements of most medical post-graduates.

DANGERS OF THE BARBITURIC HYPNOTICS.

SINCE 1902, when the barbituric acid group of drugs was first introduced, there has been a steadily increasing stream of hypnotic preparations of this class. The number of proprietary remedies now on the market indicates the rapidity of their rise to popularity and the extensive use which is being made of them by practitioners throughout the world. Veronal, medinal, dial, and the like have a certain and speedy narcotic action which is eminently satisfactory, and after their use the patient wakes without objectionable sequelæ. Yet prolonged use of these drugs has at times produced symptoms almost identical with those of disease of the central nervous system, and Sir William Willcox, speaking at a meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on May 10th, was able to recall two cases, one of allonal and one of veronal poisoning, which had been sent to him by a neurologist as undoubted cases of organic nervous disease. Ocular palsies, nystagmus, paralyses of the facial nerve or of a limb, polyneuritis, ataxia, remarkable hypotonia of the muscular system, scanning speech, faults of memory and marked emotional instability have all been recorded again and again in chronic cases of poisoning. The literature on the subject is indeed enormous, as Dr. Helen Young found when collaborating with Sir William Willcox and Dr. F. A. Pickworth in the preparation of the paper presented at this meeting. Most regrettable of all is the predominance of mental symptoms, and especially of depression, leading to frequent suicides. The first case of directly fatal poisoning occurred in 1905, and the numbers rapidly increased until 1913, when the group was put on Part II. of the Poisons Schedule; in 1918 it was transferred to Part I., and this resulted in a distinct drop, but in 1925 the numbers rose again to 22, as the public began to find out the possibility of using medical prescriptions. Sir William Willcox said that he regards these statistics as incomplete, for additional fatalities from these drugs may be hidden in the class of "narcotic poisoning" or in that of "broncho-pneumonia," since the comatose condition so lowers the resistance of the lungs that a true terminal broncho-pneumonia almost always occurs. Most practitioners consider these drugs almost harmless and prescribe them freely, but certain investigators have always had their suspicions, and Sir William Willcox has already sounded a note of warning. Never before, however, has he been so uncompromisingly backed by the weight of solid laboratory evidence. Dr. Pickworth reported the experiments carried out, under rigid control conditions, in Sir Frederick Mott's laboratories at Birmingham, and showed that continued administration of these drugs produces pathological changes in the central nervous system which, although they usually disappear when the dose is discontinued, may nevertheless become permanent. The chief phenomenon is the deposition of a homogeneous mucinoid substance in the white matter of the central nervous system. This is believed to be a product of neural metabolism, so that it must have an inhibitory effect on the life of the cells. Moreover, it is present in considerable quantity, and probably causes pressure and affects the intracranial circulation. Conduction along the nerve-fibres is interfered with, and a large part of the narcotic effect is due to the damping down of visceral afferent impulses. When administration of the drugs is still further continued, the cerebral cells shrink, lose their processes and stain poorly, and the Nissl substance is found to be reduced or even absent. It has been shown that these lipoid-soluble drugs render the lipoid envelope of the cell less permeable, so that tissue-respiration is embarrassed throughout the body. There is a capillary dilatation, an increase in the flow of blood, and a slowing of the pulse. The resemblance between the comatose condition induced by them and the condition of normal sleep is only superficial, and Dr. Pickworth found that under the influence of these drugs the margin between sleep and fatal coma in cats was a very narrow one. The peripheral parts of the nervous system are most easily affected, and the centre more slowly. There was definite evidence of a cumulative action, and of the existence of addiction Sir William Willcox had no doubt whatever. Nor, he maintained, is tolerance ever established. He felt strongly that the danger of these drugs was not properly recognised. They should be ordered only on a prescription marked "not to be repeated" and covering only six doses. The patient should be warned against daily doses, and preferably only one should be given each week. He desired to warn practitioners most solemnly against advertisements, which urged the value and ignored the dangers of preparations of the barbituric acid group. The poisonous constituent was often concealed under a fancy name, and a note in very small print. He regarded the continued introduction of new preparations, and the glowing advertisements accompanying them, as seriously misleading to the profession and a grave danger to the public.

E 107.

THE new anæsthetic, E 107 or avertin, to which we alluded in a recent annotation (THE LANCET, April 2nd, p. 718) is further described in the *Deutsche Medizinische Wochenschrift* of April 22nd, and we are informed of its chemical nature, hitherto not divulged. The substance is tribromethylalcohol (CBr_3CH_2OH). It decomposes on long exposure to light or in alcoholic solution. From experiments with rabbits it appears that avertin is rapidly eliminated by the kidneys, 50 per cent. of the amount administered being passed out into the urine in combination with glycuronic acid. The narcotic action of the anæsthetic is very rapid, and, when it is injected intravenously, is almost instantaneous. With excessive doses the respiratory centre is rapidly paralysed. Further clinical evidence is wanted before the drug can be tried with confidence for operations.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.

THE annual general meeting of this Society was held at 11, Chandos-street, London, W. 1, on May 11th, when the report for the year 1926 was presented. The Society has scored in its long wrangle with the Inland Revenue Authorities for refund of income-tax as a charity under the Finance Act. In 1925 the Commissioners of Inland Revenue dissented from the decision of the Special Commissioners to grant rebate, and requested them to state a case for hearing in the High Court. With income-tax at 4*s.* in the pound the annual tax would amount to some £940, and the directors of the Society were compelled to reduce the Christmas present in December, 1925, and the grants from the Brickwell Fund in January, 1926. In June, 1926, however, when the case came up for hearing before Mr. Justice Rowlatt in the High Court, the Society obtained

judgment with costs. The sum of £1774 has since been received from the Inland Revenue, being the amount of income-tax withheld during the last two years. In October, 1926, it was therefore possible to pay the full amount that had been deducted from the grants to widows and orphans. The legal expenses incurred amounted to £276, of which £130 was recovered from the Inland Revenue. A legacy, amounting to £3,935, brought up the total of invested capital to £138,550. Since the last report four members have been elected and one has died. The Society now consists of one hon. member, 161 life, and 141 ordinary members, making a total of 303. The income from investments amounted to £3953, £371 was received from subscriptions and donations, and £42 from life subscriptions. The working expenses were £514. During the year three widows died and one came on the funds, the amount distributed in grants during the year being £5420 8s. At the close of the year there were 49 widows and seven orphans in receipt of grants. Membership in the Society is open to any registered medical practitioner who at the time of his election is resident within a 20-miles radius of Charing Cross. Should a member remove anywhere outside the radius, even beyond the British Isles, he nevertheless remains a member of the Society, provided he has conformed to the by-laws. Relief is granted to the necessitous widows and orphans of deceased members of three years' standing and of life members. The annual subscription for a member who at the time of his election is under 40 years of age is 2 guineas; if over 40 but under 50, 3 guineas; and if over 50, 4 guineas.

IN an article published in our issue of April 30th by Sir Arnold Lawson and Mr. A. L. Whitehead, dealing with the protection of the eyes necessary for those viewing the total eclipse, a description was given of a screen through which observations of the phenomenon throughout all its phases could be made with perfect comfort and safety. We learn, however, that the price of the screen was wrongly stated. Messrs. Hamblin, the well-known firm of opticians of 15, Wigmore-street, London, who have placed the screen, "Eclipsia," on the market, state that there are two varieties of the mask which will cost 1*s*. 6*d*. and 3*s*. 6*d*. respectively, whereas the original article in our columns gave the price as 1*s*. We are informed that the cheaper screen is just as effective a filter as the more expensive one, but whereas the former consists of a screen of only one density, the latter, a more elaborate affair, having three grades of density, allows the eclipse to be viewed to the best advantage at different stages.

AN address will be delivered by Sir John Rose Bradford to-day, Friday, May 13th, at 8.30 P.M., at University College, London, the subject being the Relations of the College to Medical Education. The address is the last of four delivered in connexion with the centenary celebrations of the College, the previous lectures having been delivered by the late Prof. Starling on Feb. 28th, Sir Oliver Lodge on March 14th, and Dr. W. R. Chambers on May 2nd. The chair will be taken by Sir George Thane and academic dress and decorations will be worn.

Sir Alexander Houston's twenty-first annual report to the Metropolitan Water Board, which has just been issued (Messrs. P. S. King and Son, 21*s*.), gives the results of the chemical and bacteriological examination of the London waters for the calendar year 1926, and includes an illustrated account of the water-supply from the Kentish Wells.

THE next session of the General Medical Council will commence at 2 P.M. on Tuesday, May 24th, when the President, Sir Donald MacAlister, will take the chair and give an address.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCXXIII.

THE TREATMENT OF LUPUS VULGARIS.

THE successful treatment of lupus vulgaris, which entails the destruction of the disease with the minimum of scarring, is fraught with difficulty. The clinical types and phases of the disease are so varied that no single method of treatment is suitable for all cases, and, to obtain the best results, not only a knowledge of the different forms of treatment is necessary, but the right selection of the method best adapted to the peculiarities of the individual case. As it is a local disease of the skin, due to the presence of tubercle bacilli *in situ*, the treatment is essentially local. At the same time, the value of the local treatment can be greatly enhanced by combining it with a suitable tonic régime on general medical principles, with plenty of fresh air, good food, outdoor exercise and sunshine, or, where the last is unobtainable, with artificial sunlight from an arc lamp. There is no internal specific for lupus. Thyroid extract, which once had a reputation in this connexion, has almost been forgotten; tuberculin injections have not fulfilled their early promise, and since they are liable to light up latent foci of tuberculosis elsewhere, they are now comparatively rarely employed, except in extensive ulcerated cases, where injections of Koch's tuberculin (T.R.) or tuberculin (B.E.) may be of service in healing the ulceration.

The main objects of local treatment are: (1) the complete removal of the diseased tissue; and (2) the production of as little scarring and disfigurement as possible. The methods employed may be conveniently considered under the headings of surgical, physical, chemical, and radiotherapeutic.

Surgical Methods.

Excision.—Where practicable, when the lesions are not too extensive, and are situated on covered parts of the body, excision is the most satisfactory treatment, and even on the face, in the hands of a skilled operator, excellent results may be obtained by it. The incision should be made at least a quarter of an inch beyond the diseased area, and not only the skin, but the superficial half of the subcutaneous fat should be removed. After the excision the surface should be grafted. Krause's deep grafting should be employed rather than Thiersch grafting, since, with the latter, the wound does not heal rapidly, and the scar is liable to be uneven, occasionally keloidal, and may be followed by contraction. Deep grafting consists of transplanting a piece of skin of the exact shape and size of the tissue excised, taken from some suitable part, such as the thigh. The graft should be cut as deep as the fat layer, the fat being scraped off before it is put in position, and it should be slightly larger than the required size to allow for shrinkage. After being placed in position, it is neatly sutured to the edges of the wound. Where the lupus occurs about the mouth, eyelids, and nose, it may be difficult to get the graft to hold, and in such cases some form of plastic operation may be resorted to, employing grafts from a neighbouring part with pedicles, which can be severed when the graft has healed in place.

Scraping is a simpler method than excision, but the results from it are more uncertain. It is apt to leave unsightly scars, and if not sufficiently drastic may lead to a dissemination of the disease by opening up the lymphatics. It should be done under a general anæsthetic by a Volkmann spoon, methodically, thoroughly, and firmly, and should reach down to the subcutaneous tissue. Owing to the hæmorrhage associated with scraping, it is difficult to distinguish healthy from diseased tissue, except by the feeling

of resistance to the spoon, the lupus being so much softer than the healthy tissue. The hæmorrhage is, as a rule, too profuse to be controlled by pressure, but can be stopped by ironing the surface with a Paquelin cautery. In spite of the most careful scraping, small diseased foci are apt to be left. To obviate this, the raw surface should be dabbed over with pure carbolic, or smeared with zinc chloride paste, made fresh by pounding up a small quantity of zinc chloride in a mortar with glycerine and water. The surface should then be covered with an aseptic powder, and a dry dressing applied. When the wound has healed, it should be carefully examined for foci of the disease which may remain. This is best done by a diascope, or piece of glass pressed down on the lesion, when the diseased foci can be detected as semi-translucent brownish specks. These may be dealt with by cauterisation with a fine pointed Paquelin cautery, or by acid nitrate of mercury drilled in by a glass pen.

Scarification is a somewhat neglected method, which is useful for the destruction of small lesions about the face, as it causes comparatively little scarring. It consists of chopping up the nodule by a number of criss-cross incisions, either by a sharp tenotome, or by a special instrument devised for the purpose with several parallel blades. The bleeding is controlled by pressure, followed by the application of powdered permanganate of potash, or zinc chloride paste. It may be necessary to repeat the scarification should any disease persist after healing.

Physical Methods.

Cauterisation.—Reference has already been made to the use of the actual cautery for the destruction of persistent foci of disease after scraping, and for the control of hæmorrhage. For this purpose, the Paquelin cautery, with a point of suitable size, at a dull red heat, is superior to the electro-cautery, as it is more easily controlled and manipulated. The disadvantages of the use of the actual cautery, however, are that it is liable to destroy healthy as well as diseased tissue, and to be followed by a hypertrophic scar. As the burning is almost instantaneous, small lesions can be destroyed by this means without the necessity of a general anæsthetic.

Freezing with solid carbon dioxide is a useful treatment, especially in lupus of the verrucose type. For warty patches situated on the extremities, freezings, repeated at intervals of about a week to allow healing to take place in the interval, give better results than any other form of treatment. The exposures should be from 30–60 seconds, with firm pressure, the applicator being of suitable size. After the freezing, the exposed area should be covered with a simple aseptic dressing until healing has taken place.

Chemical Methods.

The most important caustics are pyrogallic acid, salicylic acid, permanganate of potash, silver nitrate, zinc chloride, and acid nitrate of mercury. Both pyrogallic acid and salicylic acid were once largely used in the form of plasters, generally combined with creosote, or as paste spread on lint. These were applied continuously to the lupus patch, until sloughing of the diseased tissue took place. This treatment during recent years has fallen largely into disuse, owing to its tediousness and the pain associated with it. The same criticism may be made with regard to permanganate of potash, which was employed as a powder spread over the patch, and then covered with cotton-wool, or as a 10 per cent. solution painted on daily. Silver nitrate is still used in the form of a pencil, which is drilled down into the nodule, and is of some service in lupus of the mucous membranes. Acid nitrate of mercury is the most useful of the caustics, and is of special value in destroying isolated nodules. It consists of one part of mercury dissolved in two parts of nitric acid (specific gravity 1·5). It is applied either on a piece of cotton-wool twisted on a match, or by a glass pen, and should be kept in contact with the nodule for at least a minute. The application causes the diseased tissue to become white and opaque, and results in the formation of a brownish crust, which becomes detached when healing takes place. Where the caustic is applied to small areas comparatively little discomfort is caused by it, but if the patches be of the size of a sixpence or larger, there may be severe pain for some hours after the application.

Radiotherapeutic Methods.

Phototherapy.—Apart from excision phototherapy is generally recognised as the most permanent treatment of lupus, and the one that produces the least disfigurement, the resultant scar being sometimes so slight as to be almost unnoticeable. This method is so tedious, however, that its use has to be restricted to lupus of the face and neck, or of the thin skin over joints, where it is important to avoid contracture. Long experience of its use has shown that a cure can be effected in 60 to 70 per cent. of cases, provided the patient has the time and patience to have the treatment properly carried out. Where failure has taken place, it has generally been because the lupus is too deeply situated for the irradiation to be effective, or because the diseased tissue was covered with a cicatrix impermeable to the rays. The selection of the best type of lamp is a matter of opinion; the technique should be learned in one of the hospital departments where it is in use.

X rays have been extensively used in the treatment of lupus in the past, but their indiscriminate employment for this purpose has done more harm than good. In my experience it is impossible to destroy the lupus tissue by this means without causing an X ray burn, possibly followed by epithelioma. It has recently been shows that cancer developing in old cases of lupus vulgaris has been much more common since the introduction of the X rays than it was previously. On this account they should be used with the greatest caution. I have found that they are of service for the healing of superficial ulcers in lupus as a preliminary to phototherapy, and for lesions in certain situations, such as the eyelids or the mucous membranes, which cannot be dealt with satisfactorily by actinic rays owing to the difficulties of exerting the requisite pressure.

Radium is rarely used in this connexion. Its action is similar to the X rays, and the results from it are not so satisfactory as those from phototherapy.

Conclusion.

Unless the disease has been completely removed by excision, recurrences are so liable to take place that the patient must be kept under observation and examined periodically, any foci of disease being immediately dealt with. As a general rule, where the lesions are of limited extent, and situated on covered parts of the body, excision followed by deep grafting is the best treatment. Where they are too extensive for excision they should be scraped and cauterised. For lupus on the face phototherapy gives the best results, and where the disease has attacked the mucous membrane, scraping followed by the application of lactic acid, or silver nitrate, or the actual cautery are the most useful methods.

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F.R.C.P. Lond.,
Physician for Diseases of the Skin, Charing Cross Hospital.

SHELLEY MEMORIAL PRIZES. — In 1892 the centenary of Shelley was commemorated by the placing of a memorial in Horsham Church and in other ways. A balance remained of money subscribed, and this has since been invested so that on Feb. 25th the trustees were able to hand over £500 War stock to the West Sussex County Council for the establishment of Shelley Memorial Prizes for Natural Science in the Public Secondary Schools maintained or aided by the Council.

Special Articles.

THE CENSUS OF HOUSING IN ENGLAND.

THE General Report of the Census of England and Wales, 1921,[1] now issued, contains much information of interest to medical and other social workers, and the wise worker will study carefully this record of the massed material on which he has to work. No part of this information possesses such vital importance as that relating to the housing of the people; and in this article it is proposed to concentrate on this part of the report, showing graphically and otherwise some of the socially most significant facts bearing on this problem.

For the census purposes the groups of persons included in a separate census schedule consist of either "private" or "non-private" families. The last-named includes people in hotels, hospitals, &c., while a private family may include a lodger boarding with the family, but not a lodger occupying separately part of the house.

Thus defined the average number of families per 100 occupied dwellings was 109 in 1911 and 112 in 1921, but owing to the smaller average size of families the number of persons per 100 occupied dwellings was only 485 in 1921 as compared with 493 in 1911.

Neither of these figures can be regarded as indicating improvement or worsening of housing without further detailed analysis which is given in the census report.

Size of Dwellings.

Of the total dwellings 16·9 per cent. comprised three rooms or less and 48·8 per cent., or nearly half, contained four or five rooms only. Of the total 8,750,000 private families in England and Wales 80·2 per cent. were living in the single occupation of separate dwellings, 13·7 per cent. were living two families to a dwelling, and in 6·1 per cent. of the dwellings there were three or more families.

In mitigation of the apparent large departure from the ideal of one family to one dwelling, it should be noted that a single lodger boarding separately from the occupier is regarded as a separate family.

Local Distribution of Size of Dwellings.—As the chief social interest centres in the smallest dwellings we propose to consider these particularly (Table I.).

TABLE I.—*Showing for Certain Counties the Proportion per 1000 Total Dwellings having One to Three Rooms.*

Highest.		*Lowest.*	
Northumberland	538	Isle of Wight	50
Durham	458	Middlesex	60
Yorkshire, West Riding	340	Surrey	61
Cumberland	252	Sussex, West	75
Yorkshire, North Riding	213	Sussex, East	87
Worcestershire	206	Devonshire	134
Warwickshire	199		
Yorkshire, East Riding	195		
London	181		

Northumberland and Durham stand out in respect of their very high proportions of dwellings of the smallest type. Not only so, but on the average these small dwellings are occupied by a larger number of families than obtains elsewhere. But the data so far illustrated do not give us an adequate idea of housing conditions, and it is necessary to consider also

Size of Family in Relation to Number of Rooms Occupied.

This distribution for England and Wales as a whole is shown graphically in Fig. 1. It will be seen that in 1921 only 46·0 per cent. of the private families occupied dwellings containing five or more rooms as compared with 49·6 per cent. in 1911. This is a slight indication of the general tendency in recent years to occupy smaller houses or flats. The proportion of four-roomed dwellings is almost the same at the two censuses; but it will be seen that the proportion living in smaller dwellings of one, two, or three rooms has increased in recent years.

The average size of family has dropped by 5 per cent. from 4·36 persons in 1911 to 4·14 in 1921, a natural result of the increase in the marriage-rate, along with the greatly reduced birth-rate and the heavy mortality in the war.

To ascertain whether the population in 1921 was really rather less densely housed than in 1911, further details are needed, especially in view of the general declaration of house shortage throughout the country.

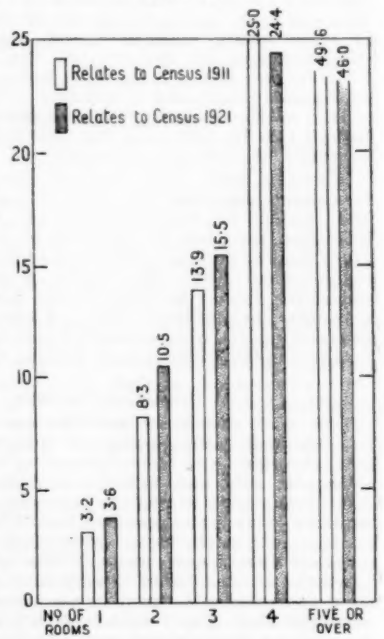
We may first take the statement of *average number of occupants per room* in the entire country. The relative proportions are shown in the following table, omitting persons living in tenements of over nine rooms. It should be noted that in the enumeration of rooms kitchens are included, but not sculleries, bathrooms, or offices or shop rooms. Thus stated the average results do not differ greatly at the two censuses (Table II.).

TABLE II.—*Proportion per cent. of the Total Population Living with (on an Average)—*

Per Room.	*1911.*	*1921*
Less than one person	31·7	32·5
One person	15·0	16·1
One to two persons	39·1	38·4
Two to three persons	7·6	7·8
Three persons and over per room	1·5	1·8

It will be seen that for 9·6 per cent. of the population there are more than two persons to a room. The ratio of more than two persons to a room has been taken in 1921, as in the preceding census, as an approximate index of the prevalence and distribution of overcrowding.

FIG. 1.



The utility of this ratio is undoubted, although it has been criticised. It does not, of course, distinguish between large and small rooms, but it is probably the best measurement we have, at present, of relatively good or deficient housing accommodation. The percentage 9·6 compares with 9·1 in 1911. More detailed figures than are given above show that, excepting families comprising only one person, for whom there is obviously no scope for improvement, "a deterioration has taken place for all sizes of family, including the larger families whose density was already approaching the region of overcrowding." The amount of worsening during the ten years is approximately 3 per cent.

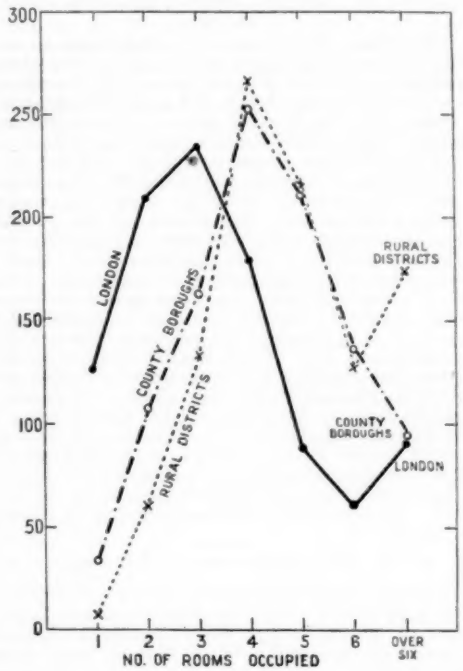
Comparison of Urban and Rural Districts.

The distribution of families (per 1000 total families) according to the number of rooms occupied in 1921

[1] H.M. Stationery Office. 1927. 5s.

is shown in Fig. 2 for London, county boroughs, and rural districts in the aggregate respectively. It will be seen that the smaller units preponderate in London to a much larger extent than in the average of county boroughs and of rural districts. This is doubtless in part due to the much larger proportion of lodgers in London to total population. In London the most frequent unit of occupation is three rooms; in

FIG. 2.



boroughs and rural districts it is four rooms. In London 13·2 per cent. of the total families live in single rooms as compared with 3·4 per cent. in the county boroughs and 0·7 per cent. in the rural districts. The approximation of the urban to the rural death-rate, and particularly the approximation of the death-rate from tuberculosis in urban and rural areas, is noteworthy in view of these figures.

The marked and consistent superiority of housing in the rural areas is further shown in Table III. in which is given the proportion per 1000 total population living in private families with the average numbers of *rooms per person*, for dwellings with the greatest room-density.

TABLE III.

—	*Census 1911.*		*Census 1921.*	
	Less than half a room per person.	Half to one room per person.	Less than half room per person.	Half to one room per person.
London	178	409	161	413
Aggregate of—				
County boroughs ..	94	415	108	404
Other urban districts .	74	383	81	380
Rural districts.. ..	66	360	65	350

Both in 1911 and 1921 the superiority of rural over urban housing, of the housing in the smaller urban districts over those in the county boroughs, and of that in the average for the county boroughs over London housing is most striking.

But far and away the most important tables in this census report—tables which should be thoroughly studied by every medical officer of health and sanitary inspector—are Tables XXVI. and XXVII., which give for each administrative county, for each metropolitan borough, and for each of the larger towns its average condition as tested by various tests of adequacy of housing.

Degree of Local Overcrowding.

These tests are (*a*) the average number of families per dwelling; (*b*) the room-density or average number of rooms per person; (*c*) the last test in which variations associated solely with differences in size of families have been eliminated; and (*d*) the proportion of persons living in overcrowded conditions, which is taken as represented by densities of less than one-half a room per person. For our present purpose we take the last-named test. It is evident that it is more likely to give valuable indications of circumstances affecting health than the three other above-mentioned tests. For the country as a whole 9·6 per cent. of the total population is within the defined overcrowding limits. In Northumberland and Durham, which here also are the worst in the series, the proportion is 30·8 per cent. and 29·5 per cent. respectively; in London it is 16·1 per cent., in the West Riding 11·5 per cent., in Stafford 11·1 per cent., in Cumberland 10·6 per cent., in Denbigh 10·1 per cent., and in the North Riding of Yorkshire 9·7 per cent.

Overcrowding in Metropolitan Boroughs.—In London the following extremes of overcrowding—as defined above—are seen (Tables IV.A and B.).

TABLE IV.A.—*Proportion per cent. of Population Living more than Two per Room.*

Worst.	*1911.*	*1921.*	*Best.*	*1911.*	*1921.*
Finsbury ..	39·8	34·0	Lewisham	3·9	4·7
Shoreditch	36·6	32·0	Wandsworth	6·3	6·8
Stepney ..	34·9	29·0	Hampstead	7·1	6·5
Bethnal Green	33·2	27·8	Westminster	6·3	7·8
Southwark	25·8	23·5	Woolwich	12·9	10·1
St. Pancras	25·5	22·4	Hackney	12·4	11·5
Bermondsey	23·4	23·2	Greenwich	12·1	13·8

TABLE IV.B.—*Overcrowding in Large Towns.*

Worst.	*1911.*	*1921.*	*Best.*	*1911.*	*1921.*
Gateshead ..	33·7	37·0	Northampton ..	1·1	2·7
South Shields ..	32·9	36·5	Oxford	2·4	2·3
Newcastle-on-Tyne	31·6	33·6	Great Yarmouth.	2·5	2·1
Tynemouth ..	30·7	34·4	Ilford	2·1	3·1
Sunderland ..	32·6	33·8	Luton	3·1	3·7
St. Helens ..	17·9	21·0	Gillingham ..	2·3	3·4
Wigan	12·9	15·3	Derby	1·9	3·5

The tables from which the above extracts have been made throw much light on the relative degree of room-density in different districts. Their teaching is so obvious as to require little or no comment. The comparisons between 1911 and 1921 are also interesting. In London the small reductions in room-density shown in most metropolitan boroughs are not so great as might have been anticipated in view of the reduced birth-rate. The worsening shown in the coal-mining and iron centres in the north is not surprising, as in these districts the reduction in the birth-rate has been relatively small. There is abundant evidence in these important tables of the need for further housing provision, especially for those who need two, three, or four rooms only.

Institutions in Relief of Housing.

It is too little recognised that hospitals, Poor-law institutions, asylums, homes for cripples, blind, &c., house a considerable proportion of the total population at any given time, and that were it not for this steadily increasing provision modern difficulties in housing would be immensely greater than they now are. The relief thus given is the more significantly important, inasmuch as it is given on behalf of those who otherwise would suffer most by remaining in their exiguous homes, and who if they remained there might

injure the health or reduce the efficiency of those remaining at home. The figures published in the census report give a clue to the amount of relief to housing thus achieved.

The institutions whose numbers are tabulated comprise workhouses and other Poor-law institutions, homes for lunatics, &c., homes for cripples, blind, deaf and dumb, hospitals and convalescent homes, prisons and reformatory schools, and some others. Only some of these are enumerated in Table V.

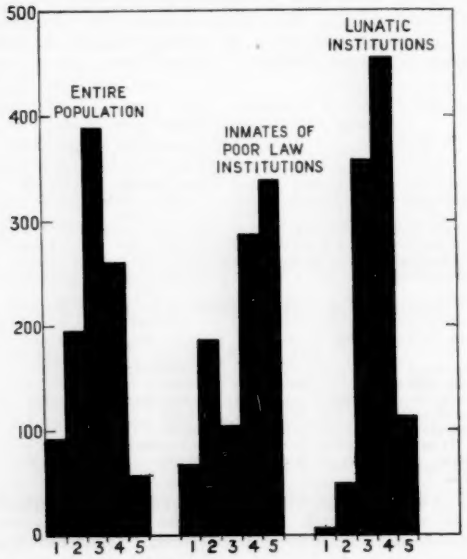
TABLE V.—*Proportion per 10,000 of the Total Population of England and Wales who at the Census were Resident in Institutions (Inmates only).*

Workhouses and other Poor-law institutions	49
Lunatics, &c.	32
Hospitals and convalescent homes	28
Homes for cripples, blind, deaf and dumb	2·2
Reformatory schools	4·2

In addition prisoners comprised 3 per 10,000 of the population.

The age-distribution of inmates of these institutions has much social interest, and we may in conclusion give this distribution for the most important of these (Fig. 3).

FIG. 3.—*Age-distribution per 1000 Males at all Ages in Poor-law Institutions and Asylums.*



1. At ages under 5. 2. 5–15. 3. 15–40. 4. 40–65. 5. Over 65.

In the first set of columns is shown the age-distribution of the male population of England and Wales at five periods of life; in the second the same is shown for Poor-law institutions, and in the third for homes for lunatics. It is clearly seen that the majority of patients in asylums is at ages 15–65, while the majority of occupants of Poor-law institutions are over 40 and especially over 65 years of age. Old age pensions have reduced the proportion in institutions at these higher ages, but it still remains true that Poor-law institutions serve chiefly for the care of persons disabled by age combined with infirmity.

DUBLIN VICTORIA EYE AND EAR HOSPITAL.—A new wing is being added to this institution and it will be opened a few months hence. It is the only hospital in Dublin devoted exclusively to the treatment of diseases of the eye and ear, and the annual report shows that last year there were 1620 in-patients and 9995 new out-patients in addition to 2836 out-patients receiving further treatment.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS.

(*Concluded from p. 992.*)

THE Thursday evening session was opened by a paper, read by Dr. GORDON HOLMES, on

Tumours involving the Chiasma, excluding Pituitary Tumours.

He said that when meeting with cases of intracranial tumour suggestive of a lesion of the chiasma it was usual to think of a new growth of the pituitary body. He had noted that in a considerable proportion of these cases the tumour did not take origin in the pituitary itself; indeed in his experience 40 per cent. of tumours causing these symptoms did not do so. The other tumours which might compress the chiasma or otherwise interfere with its functions included tumours growing from the pedicle of the pituitary, and of these there were two types: (1) simple cysts of Radcliffe's pouch, (2) adamantinoma, a variety of epithelial tumour characterised by a peculiar arrangement of epithelial cells. Or there might be tumours growing from the base of the brain, teratomata being common in this situation, or primary tumours of the choroid plexus, and of the third ventricle involving the chiasma. Another type of tumour was that which arose from the meninges, the commonest being the endotheliomata. Tumours might spring from the basisphenoid and involve the chiasma, or the basisphenoid might be the seat of malignant growths, such as primary sarcomata or metastatic carcinomata. Or tumours—e.g., aneurysms—might grow from vessels. Dr. Holmes quoted a number of cases in each group.

Dr. A. W. MULOCH HOUWER read a paper on

Keratitis Filamentosa and Chronic Arthritis,

in which he drew attention to the association between a form of conjunctivitis (later becoming keratitis) and arthritic disability of a chronic and lasting character, which proved very resistant to treatment.

Mr. J. GRAY CLEGG discussed the paper, and said he had generally used for the condition a mild application of borax and salt, with drops of paroleine. When there were definite adhesions of the cornea he used ammonium chloride. One of his patients had peliosis rheumatica, and there was an absence of tear secretion.

Colonel H. HERBERT read a paper on

Glass Membrane Formation in Iridocyclitis.

It dealt with the question of the formation of a glass membrane in the anterior chamber, which he considered took place by means of cells which had migrated from the ciliary epithelium. It could only be found in very chronic cases of iridocyclitis. The paper was illustrated by a large number of microscopical slides.

Mr. TREACHER COLLINS discussed the paper and Colonel Herbert replied.

Mr. G. F. ALEXANDER sent two papers which were read, one on a new method of controlling the eye in the operation for cataract, the other on a factor in the causation of keratitis striata.

Edward Nettleship Prize.

The PRESIDENT presented this prize to Mr. C. Howard Usher in recognition of his original work, which was, he said, of value not only to ophthalmology but also in a wider sphere. If in the future eugenics should become a science it would be largely through such spade-work as that which had been done by Mr. Usher.

Ætiology and Treatment of Hypopyon Ulcer.

The discussion of this subject occupied the whole of Friday morning.

Mr. J. GRAY CLEGG said that in 27 years on the staff of the Manchester Royal Eye Hospital he had had 160,000 patients under his care, 9576 of whom had been in-patients. Of the in-patients, 4 per cent. were cases of hypopyon ulcer, and of the whole number 0·24 per cent. Of the 399 cases, 77 per cent. were males; 23 per cent. were between 51 and 60 years of age; 19 per cent. were over 61; 18 per cent. were between 41 and 50, whilst 12 per cent. were under 10. Between the ages of 21 and 30 the percentage was 8. In 53 per cent. there was a definite history of trauma. Miners and labourers were by far the chief sufferers, the miners accounting for 20 per cent. of the cases and the labourers for 15 per cent. The condition was not found in pit ponies, and was not caused by infection from underground stables, as the draughts of air were always forced towards those stables. In the opinion of Maitland Ramsay, ulcus serpens formed 3 per cent. to 4 per cent. of all underground non-fatal accident cases. Most of the subjects of this condition seen by Mr. Clegg were below par in general health, and addiction to alcohol had a distinct influence in lowering resistance to infection, while it also hindered recovery. The large number of cases in children he thought was accounted for by septic infection in debilitated subjects. Such ulcers might be associated with infectious disease, but these cases seldom came to an eye hospital. Conjunctivitis was present in 26 per cent. of his cases, dacryocystitis in 13 per cent. (MacNab gave the proportion of dacryocystitis as 40 per cent.). All ulcers with hypopyon were due to the action of micro-organisms, and mostly the culprit was the capsulated pneumococcus of Fränkel and Weichselbaum, though others could cause the condition.

Treatment.—General treatment, said Mr. Clegg, was very important. Diet should be simple and nourishing, mild purgatives being given, and morphia or codeia might be needed to relieve pain. Any defective teeth must be put right or extracted. With regard to local treatment, if there was a definite purulent discharge a bandage retarded recovery by retaining the secretions and thereby bathing the ulcer region in toxic fluid. Among the lotions which had been used were 1 in 10,000 hydrarg. perchlor., zinc. suplh. gr. 1 ad. ℥ i, mercurophen 1 in 8000, formalin 1 in 2000 or weaker. Among the drops used were argyrol, 10 per cent. to 50 per cent., protargol 5 per cent. to 10 per cent., dionin in strengths up to 10 per cent., adrenalin 1 in 1000. Of powders, iodoform, xeroform, nosophen, and airol had been employed. Hydrarg. perchlor. had been used up to even 1 in 100 for direct application to the ulcerated surface only. The consequent burning sensation, it was found, could be alleviated by instilling drops of holocain. Another preparation having the same effect was trichloracetic acid in a 10 per cent. or 20 per cent. solution. Others were solutions of nitrate of silver, absolute alcohol, pneumococcal serum, and hydrogen peroxide. The application of dry heat to the lids by means of the Maddox electric pad, or moist heat by hot pads of lint repeatedly wrung out in hot water to which had been added a little starch, was beneficial. Or heat could be directly applied to the ulcer by a cautery knob or loop at a dull red heat being held near the ulcer, thus drying its surface repeatedly. For caustic effects, carbolic acid liquefactum was a favourite agent, as it did not penetrate the tissues too deeply. A very accurate method was by means of a Paquelin's benzol vapour cautery. Dacryocystitis when present must be dealt with. When it was mild, in might suffice to wash out the lacrymal passages twice or thrice daily; or argyrol might be introduced into those passages. But when there was much discharge, or pressure on the sac, the best way of preventing reinfection of the ulcer was by total excision of it or by complete destruction of the mucous membrane. When the tension was raised paracentesis was indicated. Frequently the necrotic mass was scraped from the surface of the ulcer, especially at its advancing edge. A more heroic method was to make the Guthrie-Saemisch section, which lowered the tension and ensured a long-continued drainage of the anterior chamber, making it easy to deal with the hypopyon. With regard to treating complications, iritis called for the vigorous use of atropine in the form of watery or oily drops. If a case was going on well the hypopyon or pus needed no special treatment, but if it was large and fibrinous it must be evacuated. In many cases the tension was raised, and then the aqueous should be allowed to escape very slowly; prolapse of the iris might occur if it escaped quickly.

Prophylaxis.—It could not be too much impressed upon workers that a watery or discharging eye was a serious affair, and that an ophthalmic surgeon should be seen at the first sign of trouble after an injury, however slight. Risk of damage to the eye was largely reduced by wearing goggles.

Mr. S. H. BROWNING dealt with the subject from the bacteriological standpoint. He said he had always found the pus of hypopyon to be sterile, and it had remained so until the time of perforation. It was possible to imagine an infection so acute as to paralyse the defensive mechanisms of the eye, so that no hypopyon arose; and it might be such a low infection, and the response might also be so low, that hypopyon resulted. Arguing thus, it seemed that hypopyon could be regarded as a sign of good response to the toxic stimulus. He had asked ophthalmic surgeons of his acquaintance whether they considered the presence of a hypopyon in an ulcerated cornea as of serious prognostic significance. Of 17 who were asked, 11 said they considered it made the condition a more dangerous one, four said it did not matter, two were doubtful. The organism most frequently associated with hypopyon ulcer was the pneumococcus, and in order that it could become established on the corneal surface, that surface must have sustained some damage. Probably the body causing the injury did not infect; infection was caused by the entry of the organisms already in the conjunctival sac. It was of interest that it was rare for ulcers to occur in cases of acute pneumococcal conjunctivitis, or in its less acute form seen in babies. Cultures should be taken from the advancing edge of the ulcer. He suggested that a bacteriological examination should be made of all ulcers; this step might save many corneæ from drastic treatment later. He had never seen the diplobacillus concerned in an intraocular infection. The most virulent cases of hypopyon ulcer he had ever seen were due to the *Bacillus pyocyaneus*, and he believed it to be the worst organism which could affect the eye. In some of the cases of pyocyaneus infection of the eyes he was able to trace the source to discharge from the ear. Streptococci did not now seem to affect the eyes so often as formerly, and hypopyon ulcer due to staphylococci was, in his experience, rare, though he had seen a panophthalmitis due to *Staphylococcus citreus*. Ulcers caused by the pneumobacillus were not uncommon. He had not had any great success in treatment of hypopyon ulcers by bacteriological methods except in gonococcal infections in the adult. He was not convinced that autogenous vaccines produced improvement. In conclusion, he referred to the magnesium sulphate and hexamine treatment of hypopyon ulcers, the latter drug being given internally in doses of gr. 10 thrice daily. If irritation of the bladder developed the dose of hexamine was reduced.

Mr. M. S. MAYOU showed a slide depicting a very early stage of pneumococcal corneal ulcer, which followed the entry of a foreign body. The ulcer was cauterised with pure carbolic and did not spread. The smear preparation was filled with pneumococci. He described, by means of a series of slides, the development of these ulcers.

Mr. W. H. MCMULLEN said these ulcers were now less common than 25 years ago. In most cases this disease was preventable, therefore prophylaxis should have the first consideration. It was especially important to protect the eyes from accidents in industry,

and also that treatment for even slight injuries to them should be skilful. He now employed the galvano-cautery in all hypopyon ulcers, except in cases of slight ulceration with little hypopyon. The lotion he used was a half-saturated solution of magnesium sulphate, used as an eye-bath for five minutes every two or three hours. He preferred not to bandage these eyes, as the warmth and immobility favoured bacterial growth. The discussion was continued by Mr. A. C. HUDSON, Dr. FREELAND FERGUS, Mr. EDGAR STEVENSON, Mr. H. MACNAB, Colonel A. F. MCCALLAN, Mr. M. HEPBURN, Colonel H. HERBERT, Mr. CHRISTIE REID, Major R. E. WRIGHT, Mr. A. L. WHITEHEAD, Sir ARNOLD LAWSON, Mr. J. ROWAN, and Dr. HUGH JONES.

In the afternoon a large number of clinical cases were demonstrated at the Eye and Ear Hospital, and on Saturday morning the following papers were read and discussed:—

Mr. M. S. MAYOU: Distension of the Neural Canal in the Embryo in relation to Microphthalmos.

Miss IDA C. MANN: The Nature and Boundaries of the Embryonic and Adult Vitreous Humour.

Mr. FRANK JULER: A case of Lid Sarcoma with Secondary Growth, apparently cured by Radium.

Mr. T. C. SUMMERS: A case of Papilloedema in a Pedigree Bull.

Members dined together at the Adelphi Hotel, and Mr. BERNARD CHAVASSE organised an ophthalmic museum, which remained open during the Congress sittings.

MEDICINE AND THE LAW.

Parental Responsibility for Education of Defective Child.

MANY years ago it was decided by the law courts that, when a husband was away at sea, his wife might be liable for neglecting the parental duty of sending her daughter to school. Lord Coleridge, Chief Justice, pointed out that any other decision would mean that the children of a seafaring population might be left entirely without education. Now there has arisen a further question of parental responsibility when the child is a mental defective and the father is in prison. Under Section 53 of the Education Act of 1921 the normal duty of a parent to cause the child to receive sufficient elementary education is converted, when the child is defective or epileptic, into the duty to cause the child to attend a special class or school if there is one within reach of the child's residence; the section goes on to say that a parent is not to be excused from this duty by reason only that a guide or conveyance to the school is necessary. The following section enacts that the local education authority, after consultation with the parent of a defective or epileptic child over 7 years of age, if satisfied that the parent is not making suitable provision for the child's education, may require the parent to send the child to a certified class or school of a suitable kind; if the parent fails without reasonable excuse to do so the local authority may apply to the magistrates for an order. Last October complaint was made by the Somerset County Council that a woman living at Burnham-on-Sea had failed without reasonable excuse to send her defective daughter to a special school provided at Bishops Lydeard. The child, a girl of 12, was at all material times residing with and was in the actual custody of the mother, an important fact, because the Education Act defines the "parent" of a child as including every person who is liable to maintain or has the actual custody of the child. The mother was stone deaf: the father was serving a sentence of penal servitude in Maidstone gaol. The mother said she refused her consent because she thought the child would be better off at home in her own charge than at a school where she would be liable to punishment; she said the child could do housework and she believed the child was by reason of defective intelligence incapable of benefiting from instruction in a special school. In this belief she was confirmed by her doctor who gave evidence that the child was feeble-minded, of an emotional temperament, better kept at home in her mother's care, and more likely to benefit by association with normal children than with other defective childen at a special school. The medical officer had certified the child to be defective and the magistrates, being satisfied that the certificate was correct, ordered the child to be sent to the special school at Bishops Lydeard. A number of ingenious points were then taken on behalf of the mother on appeal. It was argued that the parent meant the father if he was alive and his address was known, that the father had never been consulted by the local authority, had not been required to send the girl to the school, and had not refused consent or unreasonably withheld it. It was also argued that the mother was acting with the bona fide intention of benefiting the child, that the mother had not unreasonably withheld consent, and that the medical officer's certificate was wrong. The main argument was that the father, though undergoing penal servitude at Maidstone, was the "parent" for the purpose of the Act. He was in prison, it was said, but he had not ceased to be a father. The King's Bench Division, however, was not impressed by this contention. The local authority had to be satisfied under the Act that the parent was not making suitable provision for the child's education. The Lord Chief Justice said it would be grotesque if this father were allowed to say that to his regret he was in a place where it was not possible for him to comply with the requirement of the statute. The child's education could not be left neglected while the father completed his term of penal servitude. Thus common sense prevailed, and the decision of the magistrates was upheld.

Meat and Malt Wine.

The same court on the same day gave an important decision on the sale of "Extract of Meat and Malt Wine." An inspector under the Sale of Food and Drugs Acts had prosecuted[1] a defendant at Salford for selling him a bottle of extract to the prejudice of the purchaser, and not being of the nature, substance, and quality demanded. The bottle, which cost 4*s.* 6*d.*, was labelled "Extract of Meat and Malt Wine—Guaranteed prepared from Liebig's Extract of Meat—This wine will be found invaluable as a stimulant to digestion—A tonic and a food—non-alcoholic." The city analyst of Salford certified that the sample contained 81·2 per cent. of water, 16·4 per cent. of total sugars, and 2·4 per cent. of other extractive matter; in this last item was 0·06 per cent. of phosphoric anhydride, indicating the possible presence of not more than 2 per cent. of a mixture of equal parts of meat and malt extracts. The certificate further stated that no change had taken place in the article which would interfere with the analysis, that a genuine meat and malt wine should contain at least 5 per cent. of a mixture of equal parts of meat and malt extracts with a wine basis, and that the sample was not a meat and malt wine.

As in similar cases heard in the courts before, the magistrate seems to have been misled by the fact that no standard of quality is officially fixed for extract of meat and malt wine. Here was a sample certified to be 60 per cent. deficient of the minimum amount of meat and malt extract as well as being entirely deficient of wine; but, as there was no statutory prescribed minimum, it was possible to argue that the meat and malt ingredient was present however disproportionately small and that its sufficiency or insufficiency was a mere matter of opinion. Taking this view, the magistrate dismissed the information. The King's Bench Division, however, decided that the magistrate was wrong. The magistrate erred in supposing that, merely because there was

[1] See THE LANCET, 1926, ii., 972.

no statutory standard, he was *functus officio* and could do nothing. It was the magistrate's duty in this case to say that what was sold fell below the standard on the only evidence worth regarding. Recent decisions have established that, where there is no fixed standard, it is the duty of the magistrate to fix some standard for himself. This, observed the Lord Chief Justice, does not mean the fixing of a quantitative standard, but it entitles the magistrate to have regard to a minimum and to hold that upon any view of the minimum the particular compound in question must fall short of it.

This difficulty of fixing a standard is, of course, frequently experienced in magisterial cases. For instance, earlier in the year a Stoke-on-Trent tradesman was summoned for having sold Cheshire cheese which was deficient in fat. The analyst stated that the sample was found to contain, on the moisture-free substance, 37·68 per cent. of fat instead of 45 per cent. which latter figure the Cheshire Farmers' Union recognised as the standard. The solicitor for the defence urged that the analyst was not competent to fix the standard for fat at 45 per cent. and that such a standard was unknown among grocers. The stipendiary magistrate in this case fixed his own standard in the absence of a statutory standard and convicted the defendant though the fine imposed was a nominal one.

To return to the Salford prosecution, the same inspector also charged 16 defendants with aiding and abetting the grocer in that they were the firm which had sold him wholesale for resale a dozen large and a dozen small bottles of the extract of meat and malt wine. The magistrate, having dismissed the charge against the grocer, naturally dismissed also the charge against the alleged aiders and abetters. On appeal this dismissal was reluctantly upheld by the King's Bench judges. The respondents, said the Lord Chief Justice, could not have aided or abetted because they were not present at the resale; nor did there happen to be any evidence that they knew the stuff to be what it was; nor was it proved that they knew the grocer was not going to sell it subject to a warning that it contained very little meat and malt extract and no wine. It is notoriously difficult to bring an offence home to the wholesalers, who are the persons really responsible, in prosecutions of this nature.

HEALTH OF THE NAVY IN 1924.

THE latest annual report [1] of the health of the Navy deals with the year 1924 and the figures given show a slight increase of disease, compared with the very favourable ones of the preceding year. By improved arrangement of the contents the report has been shortened by 20 pages and the price is proportionately lower.

In 1924 the average number of men on the whole naval establishment was 87,620, a reduction of 1500; they may be divided amongst the three great groups—the Atlantic Fleet (20,250 men), the fleets abroad (32,040), and the Home Station (35,330). The Home Station includes recruits, men awaiting discharge, and those under training, largely in barracks. For some reason unexplained the compilers of the report separate 3990 marines at headquarters from the 87,620 other men in the service, who are called the total force.

In what follows the figures in parentheses are those for the previous year. The total cases amounted to 486·2 (473·5) per 1000, of which wounds in action accounted for 0·04 (0·02) and other injuries for 90 (92); the cases of venereal disease were 81·8 (93·1) per 1000, and from other diseases 314 (288). There were 271 (194) deaths, which gave a mortality of 3·1 (2·2) per 1000. Their chief causes were drowning 71 (18), 43 in Submarine L.24; tuberculosis 24 (17); diseases of the intestines, including 13 from appendicitis, 21 (15); wounds and injuries 34 (38); pneumonia 13 (12); influenza 13 (2); and typhoid fever 10 (4). The chief causes of the 1272 (1433) invalidings, which amounted to 14·5 (16·1) per 1000, were as follows: Sequelæ of gonorrhœa 206 (151); diseases of the eye, most of them errors of refraction, 161 (200); tuberculosis 159 (143); diseases of the ear, mostly middle-ear disease 108 (158); diseases of the heart, functional and organic 70 (86); and local injuries and wounds 60 (54). The death-rate from disease was 1·78 (1·40) per 1000, which was lower than in any previous year except 1923. Vaccinations and revaccinations to the number of 15,868 are mentioned, and there were 2 (5) cases of small-pox. Of typhoid fever there were 77 (21) cases, with 10 (3) deaths. An outbreak of 65 cases leading to 7 deaths occurred on *Royal Sovereign* at Madeira, and was traced to unapproved lettuce which had been brought on board contrary to regulation. Nothing is said about the relation which the incidence bore to previous inoculation.

Influenza caused 2407 (863) cases and was most prevalent in the east of England and on the Mediterranean station. The amount of catarrh also increased on these stations, but not in direct association, apparently, with influenza, for catarrh also increased in the Irregular Force, where influenza notably decreased, and elsewhere the two conditions varied independently. There was only one case of meningococcal infection, but that was fatal. Malaria 338 (387) decreased whilst Mediterranean fever, 16 (9), increased, because like small-pox at home, its menace is forgotten, and people decline to take the precautions recommended. Pneumonia 182 (193) decreased, and was less prevalent on commissioned ships in the fleets than on the Home Station. Tuberculosis, on the other hand, increased from 166 to 197, and so did pleurisy, from 143 to 160, these two conditions being chiefly reported from the Home Station, where 91 (60) cases of tubercle and 83 (55) of pleurisy were noted. At home the largest increase from tuberculosis occurred amongst seamen, and in general it appears to have been chiefly in men between 25 and 35 years of age and in those who had served for more than 10 years. It would be interesting to know whether these men, all senior, were married and whether any of them were known to have brought tubercle into the service from their families. Amongst its 27 cases the Royal Air Force in 1925 found that five had a family history of infection.

The incidence of venereal disease was less. In every 1000 men there were 81·84 (93·1) cases and 68·3 (78·5) new infections; China retains its baleful pre-eminence with 248·4 cases per 1000, 209·1 of them new. The figures for secondary syphilis continue to fall. 33 (48) cases of gastric ulcer are reported, and 47 (32) of duodenal ulcer; taking these two conditions together the number is unchanged. Appendicitis increased from 383 cases to 392. Of scurvy 2 (0) cases are noted, one from the Atlantic Fleet and one from *Hood* during the world cruise; it is disappointing that no description of either case of this rare and interesting disease is given. Simple urethritis, 3 (52), has much decreased; scabies was less by 30 per cent., and other diseases of the skin by 10 per cent. Marines at headquarters had less tuberculosis than the service generally—1·7 per 1000—and far less venereal disease, 22·03 per 1000 for all cases and 14·3 for new infections.

The incidence of pneumonia rose in the training ships from 1·7 to 6·6, but they had a bad year with influenza, diphtheria, and scarlet fever. They had less tubercle, and the amount of rheumatic fever and scabies was halved. Nothing is said about the health of the cadets at Dartmouth. This report is a year later in appearing than those of the Army and Air Force, and it is to be hoped that when this leeway has been made up the Naval Medical Department may find it possible to supply information about this training college.

[1] Statistical Report on the Health of the Navy for 1924. London: H.M. Stationery Office. Pp. 127. 4*s*. 6*d*.

SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Hookworm Infection on the Rand.

THE presence of hookworm infection in the gold mines of the Witwatersrand has recently been brought to notice. The disease has been introduced by East Coast natives imported into the Union, and the infection has apparently spread to British South Africa natives and to a few Europeans. In 1911 it was reported that 90 per cent. of Mozambique native workers in the mines and on the cane-fields were infected, but no evidence of soil infection was obtainable, and it was presumed that the larvæ were killed in the acid water percolating through the soil. A report has just been published by Prof. W. O. Fischer and Dr. A. J. Orenstein giving the result of investigations they have made on the subject. These investigations are not quite completed, but so far they demonstrate many important points.

No evidence has been found to back up the surmise that the acidity of the water in the mines destroyed the larvæ. Investigation of fæces of patients admitted to the City Deep Native Hospital showed that 19 per cent. of the patients were infected with hookworm. In the majority of cases there were no clinical manifestations which would lead one to suspect infection. Marked anæmia was present only in a small number of cases and in only one was the general condition of the patient such as to point definitely to a clinical diagnosis of hookworm infection. It was further shown that of the East Coast natives 25 per cent. were infected, whereas of the British South Africa natives only 8·8 per cent. were infected. Investigation of the soil of four mines has been carried out and in all cases hookworm larvæ were found either on the floors of latrines, in the vicinity of latrines, or near drinking-water containers. In one case larvæ were found under the tram-rail of a main drive. Practical prophylaxis so far as mine-workers are concerned therefore amounts to protecting the mine soil against pollution, and to mass treatment of infected natives. One of the recognised methods of prophylaxis—i.e., the wearing of boots as a protection against infection—can be little used under the local mining conditions.

At a meeting of the Transvaal Mine Medical Officers' Association this report was discussed and the following recommendations were made:—

1. That all East Coast natives recruited for mines be treated with carbon tetrachloride prior to distribution to the mines, and that a similar treatment be given at the mines a week after recruitment. Voluntary East Coast natives to be included. The treatment of British South Africa natives to be deferred for future consideration. Estimated cost of this treatment is £1500 per annum.
2. That all underground and surface bucket latrines be constructed in conformity with the principles recommended in the report, and existing latrines not conforming thereto be immediately reconstructed.
3. That the sumps of these latrines be daily cleaned and freely swabbed out with a 2 per cent. solution of an efficient coal-tar disinfectant, and that a half-inch layer of the disinfectant be left in the sump. The floors, walls, and perches of the latrines to be swabbed daily with the same disinfectant.
4. That more stringent supervision be exercised to prevent natives defæcating in disused stopes.
5. That fæces from underground be removed only in hermetically sealed buckets.
6. That floors and walls of cages and skips, in which buckets are hauled, be effectively swabbed out with a 2 per cent. solution of coal-tar disinfectant immediately after the completion of the haulage, and before they are used for other hauls.
7. That 2 per cent. coal-tar disinfectant be heavily sprayed daily on the foot-wall in the immediate vicinity of latrines and drinking-water tanks.
8. That all East Coast natives admitted to hospital receive at least one carbon tetrachloride treatment before discharge from hospital.

Pneumonic Plague.

On April 7th a man was removed from the R.M.S. *Armadale Castle* as a case of suspected pneumonic plague. The patient died and the diagnosis was confirmed post mortem. The mail-boat was put in quarantine at once and passengers were warned that they sailed at their own risk. Since then wireless reports show that there have been no further cases on board. The exact source of infection has not been traced, but plague is still present in certain areas of the Union—particularly in the Orange Free State and in the north-eastern part of the Cape Province—although the coastal belts are reported free of infection. The Department of Public Health keeps up a continuous campaign against rats and gerbilles, but the rodent question is a very difficult one in a country of this size.

Sir Edmond Stevenson.

The death occurred at Rondebosch, Cape, on April 16th of Sir Edmond Sinclair Stevenson, J.P., F.R.C.S. Edin., in his seventy-sixth year. Sir Edmond Stevenson was the son of William Ford Stevenson and was born in 1850 at Geneva. In 1878, after studying medicine at the University of Edinburgh, St. Thomas's Hospital, and then in Paris, Brussels, and Berlin, Sir Edmond Stevenson first came to this country, where he eventually became one of the leading members of the profession. He began by practising at Malmesbury, Cape, and later moved to Rondebosch. Sir Edmond Stevenson was medical adviser to Cecil Rhodes and to Dr. Jameson, as well as being a great personal friend of Rhodes. He served in the Transkei native campaign, the Boer War, and the Great War, and was knighted in 1905. He took a great part in the public and social life of the Peninsula. He leaves a son and two daughters.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Registration.

THE Medical Practitioners Bill, of which a summary was given last week, passed its second reading in the Dail on May 4th, and has since been considered in committee. On the motion for the second reading Mr. McGilligan, the Minister in charge, explained the provisions of the Bill, and the motion was carried unanimously and without debate. Further study of the Bill brings to light some points omitted in the abstract given last week. Casual vacancies on the Free State Council are to be filled as they occur by the body in whose representation the vacancy has occurred, but this does not apply to casual vacancies among the direct representatives of the profession, which are to be filled by election by the Council itself. Such a procedure is vicious in two respects. It disfranchises the registered practitioners partially or completely, perhaps for several years, and it may exercise an improper influence on the choice of the practitioners at the next regular election. It is not unlikely that this clause will be amended before the Bill becomes law.

In the agreement between the authorities of Great Britain and those of the Free State, which forms the foundation of the Bill, there is a hiatus which may lead to misunderstanding in the future. It seems to be assumed that the General Council will no longer have disciplinary control over persons registered in the General Register who practise in the Irish Free State. There is no such proviso in the agreement, and it seems as if it would still be the duty of the General Council to investigate the conduct of persons registered in the General Register, wherever they reside, when complaints arise.

Notwithstanding some defects, medical opinion generally looks favourably on the Bill, and it is realised that it is the fruit of much pains and care on the part of the responsible Ministers.

Local Appointments in the Irish Free State.

The Local Appointments Act, 1926, took from local authorities the power of appointing officers except on the recommendation of a central authority set up

under the Act, the local appointments commissioners. It left to the local authorities, however, the power of promoting persons already in the public service to fill vacant offices, without reference to the appointments commissioners, and subject only to the approval of the Minister. There are rumours that even this narrow power is being abused, and that some local authorities, swayed by nepotism or improper influence, are attempting to give promotion to junior, inexperienced officers over the heads of those who are more capable. Impressed by this danger, the Leinster branch of the British Medical Association, at its meeting last week, passed a resolution urging that the Minister should withhold sanction to any appointment which is not made on grounds of long and meritorious service, with due regard to evidence of attempt at self-improvement.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Swindon.

THE following statistics are taken from the annual report for 1926:—

Population, 57,320. Birth-rate, 17·1. Death-rates per 1000 of the population: all causes, 10·7; tuberculosis, 0·70; cancer, 1·31; respiratory diseases with influenza, 1·6; heart disease, 2·0. Death-rates per 1000 births: neonatal, 23; infant, 48; maternal from childbirth, 7·1.

Dr. Dunstan Brewer reports that 1926 was the healthiest year in the history of the borough in spite of unemployment and the coal shortage. The former has not exercised any tangible influence up to the present, and the latter, he considers, was favourable to the public health because it improved the atmosphere. Unemployment caused the amount of "free" milk for mothers and infants to be nearly doubled. Among general sanitary conditions there are three that require attention. The littering of roads with waste paper, &c., chiefly originating from fish-and-chip shops; the fouling of the footways by dogs, which he thinks has been dealt with satisfactorily in other towns; and spitting. Since the 1925 Meat Order came into force the carcass of every animal slaughtered in Swindon has been inspected, and the amount of condemned meat is about double what it was. Butchers in towns where the Order is enforced complain of unfair competition from districts where it is ignored.

During the year 392 new houses were erected, 21 by the corporation outside the borough; 100 additional municipal houses are under construction, 96 without and 4 within the borough. As the increase of the population was 440, the 392 new houses helped to diminish the housing shortage. There is still, however, a great call for houses of the cheapest and simplest construction, and the only solution appears to be the provision by the community at an unremunerative figure of houses for people with large families and small incomes, amongst whom overcrowding is not being diminished. Although Swindon has no slums a fair number of houses ought to be demolished when possible. Many, for example, lack facilities for food storage and have no properly placed sinks, nor w.c.'s with flushing apparatus. Two favourable factors in Swindon are the large proportion of houses owned by the occupiers and the supply of cheap electricity.

The hospital accommodation is inadequate. The Victoria Hospital (36 beds) takes mainly surgical cases. The Great Western Railway Hospital (12 beds) has a temporary building in course of construction to contain 30 beds. The maternity hospital (13 beds) is to be replaced by a better one. The isolation hospital has 70 beds, the venereal diseases hospital 6 beds, and the small-pox hospital 12. The most urgent need is for medical beds, but provision is also required for special departments—nose, throat, ear, eye, &c.—and for mental patients not suitable for an asylum. At the end of 1926 it was decided to apply the full service available for school-children, including dental, orthopædic, ophthalmic, and throat treatment, to ex-babies. The new maternity hospital will include a six-bed ward for disorders of infancy.

At the maternity hospital there were 222 confinements. One case notified as puerperal fever and 11 of puerperal pyrexia all ended in recovery. There were 3 maternal deaths and the 15 stillbirths included 5 breech presentations and 3 antepartum hæmorrhages. One infant developed pneumococcal pneumonia on the third day, and it is thought that the infection was brought by the father from a house where there was a case. Dr. Brewer emphasises the need for better facilities for treatment of puerperal insanity. Three women with this condition were removed to the fever hospital, were treated without certification, and left the hospital cured without themselves or anyone else knowing that they had been temporarily insane. Fortunately they were also notified as puerperal sepsis. Under ordinary methods of treatment these cases are either left at home or removed to an asylum and in both events their future lives are probably wrecked. Antenatal work makes progress. There were 261 new cases and 45 old cases on the books, accounting for nearly a third of the total births. Dr. Brewer records the deaths of 11 women in connexion with childbirth during the year (the death-rate given above being calculated on the Registrar-General's classification of 7 deaths from this cause), and describes maternal mortality as "the blackest spot in the whole of the practice of medicine." He insists that "the first business of any endeavour is to explore the position, to sweep away all subterfuges, and reveal the true facts without any attempt at prevarication." Such a policy gave good results in dealing with ophthalmia neonatorum. He points out that 7 of the 11 deaths could have been prevented by timely interference. Bacterial examination in the eight cases of ophthalmia neonatorum revealed the gonococcus in three cases, the pneumococcus in two cases, and a doubtful bacillus in one case. In two cases no organism was found, but Dr. Brewer points out that not infrequently the gonococcus cannot be found in the acute stage, but is found later. He suggests that the occurrence of the pneumococcus as a cause of ophthalmia is a "point of considerable interest."

As in previous years a careful investigation was made of all the deaths which occurred under the age of 17. The 49 infant deaths when reclassified included 18 due to prematurity, 11 to ill-feeding, and 2 to congenital syphilis. Of the 45 cases of scarlet fever notified since April 1st, 1926, 11 were traced to one carrier and 7 to another. One case of human glanders occurred in a person who had nothing to do with horses: the source of infection could not be traced. Notification of tuberculosis during the last three years has been carried out efficiently. The pathological laboratory of the public health department was completed during the year and bacteriological examination of milk is to be undertaken.

SCHOOL MEDICAL SERVICE.

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Birmingham	145,456 (e) 7,018 (s)	—† —†	44,364 5,300	64,836 410	28·28 —
Leamington	3,416 (e)	—†	1,070	1,976	10·3

* Excluding uncleanliness and dental defects. † Not given.
(e) Elementary schools. (s) Secondary schools.

Birmingham.

The outstanding feature in the development of the year was the opening of the new clinic at Sheep-lane, a model of its kind in design, accommodation, and

scope, as Sir Humphry Rolleston made clear at the inaugural ceremony.[1] In his report Dr. G. A. Auden traces the history of the distribution of clinics showing how present needs are being met and provision made for future development; a short review is given of the charitable organisations which coöperate with the school service in rendering aid to ailing children. In spite of expansion in every branch of remedial and preventive work the percentage of children requiring treatment remains high; no doubt many of the ailments are temporary or trivial, but their number is an indication of the need for commencing preventive and remedial measures before school entry.

Some interesting observations are made in the dental section of the report. Considering the greater activity and duration of sunshine in New Zealand and the undoubted greater richness of antirachitic factors in the average dietary there, Dr. E. H. Wilkins was surprised to find a lower incidence of dental caries in Birmingham than in New Zealand. He has now correlated the incidence of dental decay with that of rickets, as evidenced by bony deformity of the chest wall in children of the 5-6 year old group, and comes to the tentative conclusion that rickets predisposes to decay of the teeth.

Discussing rheumatic infections in school-children, Dr. Auden estimates that 1·5 per cent. of the elementary school population in Birmingham give evidence of heart disease, and Dr. A. P. Thomson, by aid of an excellent map, shows the grouping of cases along the valleys of the Rea and the Hockley Brook. It will be remembered that Dr. F. C. Shrubsall found a similar grouping of rheumatic cases along the lines of the old watercourses in London. The Children's Hospital is now acting as a sort of central bureau and clearing-house for all cases of rheumatism, working in coöperation with the Baskerville Home which has been enlarged to 90 beds.

Dr. Jessie J. Stooke finds that left-handedness is present in Birmingham school-children in the proportion of about 1 to 36 and that it is almost twice as common in boys as in girls. Dr. Thomson's account of the special schools shows how closely associated these institutions are with the Children's Hospital, an excellent arrangement whereby provision for treatment is amply assured. *Leamington.*

Dr. W. L. Goldie deplores the large proportion of children (68 per cent.) who are unvaccinated and the position is apparently becoming worse as the proportion of unvaccinated is even higher in the new entrants. The dental work is rapidly increasing, the number reporting for periodical inspection at the clinic being over five times that of 1920; more of the dentist's time is given to treatment and less to inspection, while fillings have risen from 0·4 to 0·8 and extractions have fallen from 3 to 2 per child. Except for the dental clinic and one for minor ailments the treatment of school cases is not carried out by the education authority directly, for the Warneford Hospital deals with tonsils and adenoids, defective vision, and ringworm cases. This hospital also makes up for the absence of a complete orthopædic scheme by providing a well-equipped and up-to-date massage and electrical department. Dr. Goldie relates an interesting case of extensive developmental defect of bone involving especially the femora and gives an account of cardiac disease in a family affecting five out of eight children. All these children were anæmic and undersized and had suffered from measles, scarlet fever, and whooping-cough, but not from rheumatism; such a condition might improve under an open-air régime, but unfortunately there is no open-air school or special school of any kind in the borough.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 30TH, 1927.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 277 (last week 358); scarlet fever, 1105; diphtheria, 671; enteric fever, 45; pneumonia, 1059; puerperal fever, 35; puerperal pyrexia, 105; cerebro-spinal fever, 14; acute poliomyelitis, 11; acute polio-encephalitis, 1; encephalitis lethargica, 32; continued fever, 1; dysentery, 9; ophthalmia neonatorum, 146. No case of cholera, plague, or typhus fever was notified during the week.

The cases of small-pox were notified from the counties of Cornwall 1 (Liskeard), Derby 8, Durham 121, Lancaster 2, Middlesex 8 (Hendon), Northumberland 15, Nottingham 2, Yorks North Riding 1, West Riding 62, Monmouth 57. The Hendon cases up to date number 9.

Deaths.—In the aggregate of great towns including London there was no death from small-pox nor from enteric fever, 68 (0) from measles, 5 (1) from scarlet fever, 41 (11) from whooping-cough, 31 (11) from diphtheria, 51 (9) from diarrhœa and enteritis under two years, and 71 (18) from influenza. The figures in parentheses are those for London itself. Since this report was made up 5 of the cases of small-pox reported from Hendon have proved fatal.

SMALL-POX IN HENDON.

We are indebted to Dr. T. S. McIntosh, medical officer of health for the Hendon Urban District Council, for the following notes on the outbreak of small-pox there:—

CASE 1.—Male, aged 47, vaccinated in infancy. Was comparatively mild case and is now convalescent. Although this was not a severe case, it was not of the very mild type prevailing in certain parts of England at the present time.

CASE 2.—Wife of Case 1, age 42, vaccinated in infancy. Was a severe case, but I understand is now convalescent.

CASE 3.—Daughter of Case 1, female, aged 16, unvaccinated. Very severe case. Confluent fatal case.

CASE 4.—Daughter of Case 1, aged 8, unvaccinated. A severe case, but doing well, and is expected to recover.

Cases 5, 6, 7, and 8 were workers in laundry to which linen from the family containing the first four cases was sent before the disease was recognised.

CASE 5.—Female, aged 38, unvaccinated. Very severe case. Confluent, fatal.

CASE 6.—Female, aged 15, unvaccinated. Very severe case. Confluent, fatal.

CASE 7.—Female, aged 23, vaccinated in infancy. Rapidly fatal case of hæmorrhagic small-pox. This patient gave birth to a premature live child on the morning of the day on which the diagnosis was made. The severity of the case is probably partly accounted for by the complication of pregnancy and parturition.

CASE 8.—Female, aged 21, unvaccinated. Moderate case. Doing well and is expected to recover. She was vaccinated after the onset of the first symptoms. The vaccination was successful, the vesicles appearing about the same time as the small-pox eruption.

CASE 9.—The new-born child of Case 7, female. Developed papules a week after birth and died on the fifth day. Was successfully vaccinated, the vaccination vesicles appearing about the same time as the small-pox eruption.

Dr. McIntosh adds that the source of infection of Case 1 has not been traced.

THE MEDICAL PROFESSION IN PALESTINE.—At the recent conference in Jerusalem of the Jewish Medical Society of Palestine it was stated that there are now 540 physicians in Palestine, 373 being Jews, 40 Arabs, and 123 Europeans. About one-third of the Jewish physicians are women.

POST-GRADUATE MEDICAL TEACHING IN GLASGOW. The programme of the summer session has now been issued. The teaching facilities comprise (1) a general medical and surgical course; (2) a certain number of special clinical courses; and (3) clinical assistantships. The first is a whole-time course occupying the last two weeks of August and the first two weeks of September, and is arranged to interest general practitioners. Clinical assistants are appointed for periods of three months, but their work need not necessarily occupy the whole day. They will have facilities for intimate study of cases, under supervision, and for detailed investigation, but will not be permitted to treat patients. Further information may be had from the Secretary, Glasgow Post-Graduate Medical Association, University of Glasgow.

[1] THE LANCET, 1926, ii., 687.

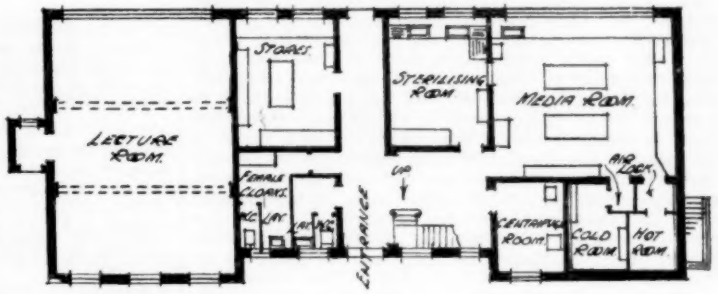
INVESTIGATION OF INFECTIOUS DISEASE.

OPENING OF M.A.B. LABORATORY BY THE MINISTER OF HEALTH.

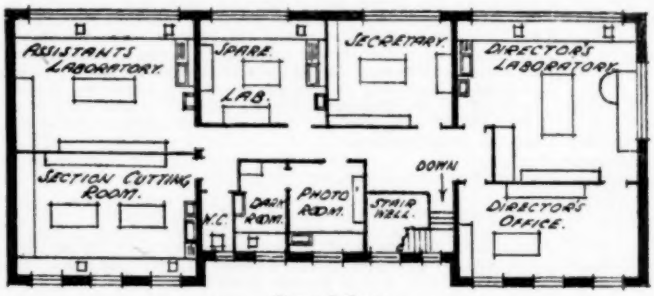
IN 1913 the Metropolitan Asylums Board appointed a research pathologist whose function should be to investigate the ætiology of infectious disease rather than to deal with immediate demands for preventive precautions. A laboratory was provided, first at the Lister Institute and later at the National Institute of Medical Research, Mount Vernon, and work was continued under the general supervision of Sir German Sims Woodhead until his death in 1921, after which the Board invited a scientific advisory committee to exercise general supervision over its research and bacteriological laboratories. On the recommendation of this committee the Board in 1924 decided to make each hospital self-contained by the appointment of a skilled pathologist with a properly equipped laboratory at his disposal. As a first step two such laboratories have been instituted for the more special branches of pathological work and for research. A temporary building has been adapted at the North-Eastern Hospital to serve the needs of institutions in the North of London, whilst new laboratories have been erected at the Park Hospital, Hither Green, S.E., to form the southern group laboratory and to be the headquarters of Dr. J. E. McCartney, who in April of last year took up his duties as the Board's Director of Research and Pathological Services. On Monday last, May 9th, the new buildings at Hither Green were formally opened by Mr. Neville Chamberlain, Minister of Health, in the presence of a distinguished gathering.

Mr. FRANCIS MORRIS welcomed Mr. Chamberlain on behalf of the Metropolitan Asylums Board, of which he is chairman. After referring to the misleading title under which the Board disguised its activities from the public, he pointed out that it had over 8000 beds in hospitals for infectious diseases, and that when there was last an epidemic of scarlet fever and diphtheria the number of patients under

PLAN OF LABORATORIES.



First floor.



Ground floor.

treatment was 9500. This enormous amount of material gave a great opportunity for investigation, and it was the Board's intention to carry out research on a larger scale. The problems of rheumatism in children and of encephalitis lethargica were being studied, but an even bigger problem was presented by measles. Whilst the type of scarlet fever seemed to be growing milder the virulence of measles was increasing. Taking the death-rate for the last 15 years it would be seen that of every million people dying 251 died from measles and only 42 from scarlet fever. As many as 35,000 cases of measles occurred among London school-children in one year.

Mr. NEVILLE CHAMBERLAIN agreed that the mean of the Metropolitan Asylums Board was not altogether enlightening; it was, in fact, difficult to dissociate it from some suggestion of dementia, although, of course, nothing could be more unfounded. Those who really knew were aware that the M.A.B. was the great public health hospital authority in London, having under its control about 28 different institutions. Huge as was this establishment, it could not be said to be too large; last year, he believed, over 33,000 cases of infectious diseases were notified in London alone, excluding tuberculosis. Whilst the M.A.B. was known throughout the country as a model of what an authority should be in its provision for the isolation and treatment of these infectious diseases, it could, he thought, be equally well acclaimed as a model of what administration could be. It must, nevertheless, remain a fact that the maintenance of all these hospitals was very expensive, and that, however economically it was done, its expense must substantially add to the burden of the rates.

There was another aspect of this economic question. He had been a manufacturer long before he was a politician, and he recollected that one of the objects constantly before the manufacturer was to try to find means of discovering flaws in raw materials before much time and money had been expended in converting them into finished articles. Not only had he to try to find means of avoiding the flaws, but he had to dispense with what were called wasters. In human experience, too, there were wasters. He supposed that, broadly speaking, 5 per cent. of the children born in London died from an infectious disease before they reached the age of 20, and of those who survived an unknown percentage were crippled by having had these diseases. It was necessary to consider the waste caused by this premature death of people who could never make any contribution to the common life. All the care of their parents, all the education, the service of water, gas, light, recreation, and the rest of it—all this was to be spent on children who were going to die before they reached the age of 20, just as it had been spent on the others who were afterwards going to pay their contribution. If this could only be prevented there would be a substantial diminution in the burdens which the Board was bound to throw on the ratepayers of London.

When he thought of all the money spent on isolation hospitals and on treatment of infectious diseases, it seemed to him extraordinary that more had not been done to discover their cause and the means of their prevention. As a member of a public body years ago, it had been his duty to inspect infectious hospitals. On the first occasion he had asked his guide what was the cause of scarlet fever,

and, to his astonishment, had bowled him out first ball. Even now it was impossible to be sure of its cause; some medical men believed that they had discovered the villain of the piece, whilst others thought that the wrong party was suspected. There was still a great deal of research to be done to find out what really was the cause. Although it might not be so mortal a disease as it was some years ago, nevertheless scarlet fever remained a great tax on our resources; the average stay in hospital of a scarlet fever patient was about eight weeks. Those who were doing research on scarlet fever were turning out armies of anti-reds by way of reinforcements to the regular forces of the body, and if by so doing they could shorten, by even a week, the patient's stay in hospital, it would considerably relieve the accommodation for patients.

A great deal of work had been done on diphtheria, but there, he thought, the party had been arrested, found guilty, and convicted, and to-day, as a consequence, not only had the treatment of the disease materially improved, but advance had been made on a still more profitable course—we had begun to find out how to make people immune from the attacks of the disease. We had been able entirely to prevent its incidence and to check and control it even in remote parts of the country. As a result of all this the case-mortality from diphtheria in London had fallen from about 13 per cent. at the beginning of the century to under 4 per cent. at the present day. He thought the results achieved against these two diseases were encouraging enough to show that money spent on the regular provision of facilities for research was a good investment. The laboratory which he had just inspected was not particularly magnificent either in its appearance or its appointments; it was designed on strictly business principles. But to the eye of imagination there were possibilities, and time would make it far more interesting than many a famous monument. As the Minister responsible for the department whose chief duty was to try to reduce the necessity for any such Minister at all, he most heartily congratulated the Board upon its enterprise and on the infinite care and pains taken to ensure the success of the experiments that would be done. Money had been spent on the things that really mattered.

The Minister then declared the laboratories open and a vote of thanks was proposed by Canon Sprankling (Chairman of the Infectious Hospitals Committee) and Sir D'Arcy Power, a member of the Board.

The visitors next proceeded to inspect the laboratories, over which Mr. Chamberlain had previously been conducted by Dr. McCartney.

The Laboratories and Their Work.

There are two buildings and the cost of their erection and equipment was about £13,500. The larger, of which two plans are shown on page 1049, measures 87 feet long by 36 feet wide and contains a lecture room for the use of students attending the hospital's practice. There are bacteriological, pathological, biochemical, and photographic sections; an internal telephone system links up all the main rooms, and binocular instruments have been secured where possible in order to reduce fatigue. The smaller building, a short distance from the laboratory, is the animal house and has rooms for keeping stock animals, experimental animals, and fodder, for washing up, and for inoculations.

The Scientific Advisory Committee to the Metropolitan Asylums Board consists of Dr. F. H. Thomson (chief medical officer, Infectious Hospitals Service), Sir George Buchanan, Prof. H. R. Dean, Dr. C. M. Wenyon, Prof. J. C. G. Ledingham, Prof. Hugh MacLean, and Prof. Major Greenwood. The director and assistant director of research and pathological services are Dr. J. E. McCartney and Dr. William Mair, and the assistant pathologist is Dr. V. D. Allison. Although the Scientific Committee recommended the present reorganisation of the Board's laboratories and is convened to discuss any large piece of investigation proposed, it will not suggest the lines of work to be pursued.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdrs. W. G. Edwards and G. C. Cross are placed on Retd. List with the rank of Surg. Capt.

Surg. Lt.-Comdr. G. W. Woodhouse to be Surg. Comdr.

M. L. McCauley and L. A. F. Wiles to be Surg. Lts.

ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Lts. G. A. Clark and R. H. O. Robinson to be Surg. Lt.-Comdrs.

ROYAL ARMY MEDICAL CORPS.

Capts. A. E. Richmond, T. Young, J. M. Mackenzie, and R. T. Cox to be Majs.

Capts. H. M. Hart-Smith and J. W. Darling to be temp. Capts., and temporarily relinquish the rank of Capt.

TERRITORIAL ARMY.

Capt. C. D. Walker resigns his commn. and retains his rank.

Capt. R. Ward to be Lt.-Col. and to comd. the 128th (Wessex Fd. Amb.).

Capt. J. F. O'Grady, from the Gen. List, to be Capt.

Lt. L. N. Jackson, late R.F.A., Spec. Res., to be Lt.

Lts. P. Mumford and W. H. Gratrix, from the Gen. List, to be Lts.

Hygiene Companies.—Capt. J. Cohen, from the Gen. List, to be Capt.

The King has conferred the Territorial Decoration upon Lt.-Col. L. A. Harwood and Maj. W. F Mackenzie.

ROYAL AIR FORCE.

Flight Lt. R. S. Topham is placed on the retired list at his own request.

Flight Lt. L. Game is transferred to the Reserve, Class D 2, and is employed with the Regular Air Force for a period of one year.

INDIAN MEDICAL SERVICE.

The King has approved the retirement of Lt.-Col. A. F. W. King.

ROYAL ARMY MEDICAL CORPS WAR MEMORIAL.

A service of dedication of the stained glass window which completes the Royal Army Medical Corps War Memorial in Westminster Abbey will take place on Sunday, May 22nd, at 4.15 P.M., in the nave of the Abbey. No tickets of admission are required, but subscribers to the memorial fund and others interested desiring reserved seats for the 3 o'clock evensong preceding it should apply by letter to Major-General H. B. Fawcus, C.M.G., D.S.O., Room 313, War Office, Whitehall, S.W. 1. Uniform need not be worn at the service of dedication.

EXTENSION OF HULL ROYAL INFIRMARY.—It is proposed to provide an annexe to this hospital at a cost of £150,000. Mr. Philip B. Reckitt has given a site of 50 acres and £5000, and Mr. T. R. Ferens, Sir H. Gamman, the late Mr. T. Bailey, and Messrs. Reckitt and Sons, Ltd., have each subscribed £10,000. Eventually 500 beds will be provided with all the necessary ancillary accommodation. Meanwhile a new operating theatre on the existing site is nearly completed and extensions of the out-patients' department and the nursing accommodation are in prospect.

ROYAL SANITARY INSTITUTE.—A Sessional Meeting will be held on Friday and Saturday, May 20th and 21st, in the Guildhall, Bath. Dr. Charles Porter will preside. On Friday, at 7.30 P.M., a discussion on Cremation will be opened by Dr. H. T. Herring (hon. secretary, Cremation Society of England); other speakers will include Dr. Preston King, Mr. J. S. Carpenter, and Mr. G. A. Noble. On Saturday, at 10.30 A.M., Mr. F. P. Sissons will read a paper on Sewage Disposal, and there will be a visit to the Bath City Sewage Disposal Works.

Correspondence.

"Audi alteram partem."

LOCAL EPILEPSY.

To the Editor of THE LANCET.

SIR,—Dr. Gordon Holmes's Savill Memorial Oration in your issue of May 7th makes me think that it will interest your readers to learn that Richard Bright, just upon a century ago, knew a good deal about local epilepsy.

He says [1]:—

"As far as I have been able to infer from my own observation, I should say that the organic causes of epilepsy, connected immediately with the brain, are more frequently such as affect its surface, than such as are deep seated in its substance."

He then tells us that thickening of the skull or of the membranes, or a tumour on the surface of the brain will cause epilepsy, and he records cases in support of his contention. He describes "the paralytic condition which remains after the attack," and he maintains that from the symptoms the situation of lesions in the cerebral nervous system can be foretold. Particularly important in connexion with epilepsy is the case of a man who had fits of the right side. Bright [2] says:—

"I now gave it as my opinion that these fits were owing to some local disorganisation affecting the membranes and cineritious portion of the brain on the left side. . . . My reason, then, for supposing that the epileptic attacks in this case depended rather on a local affection . . . . was the degree of consciousness which was observed to be retained during the fits."

Although he was aware of the value in diagnosis of retention of consciousness, yet the context shows that he knew that consciousness may sometimes be lost during fits due to organic disease.

A second paper,[3] which shows that Bright knew where the lesion was in ordinary aphasia, concludes thus:—

"The symptoms which arise in cerebral and spinal disease are actually the results . . . of the lesions which the different parts of the nervous system have suffered."

I think we may with justice say that Bright was one of the earliest enunciators of the doctrine of cerebral localisation.

I am, Sir, yours faithfully,

May 8th, 1927. W. HALE-WHITE.

TESTS FOR DRUNKENNESS.

To the Editor of THE LANCET.

SIR,—I am not concerned with the differences of opinion as between Dr. Southgate and Sir William Willcox on this question, but as a member of the committee which issued the report I am keen on accuracy. It is no doubt an amusing pastime to set up Aunt Sallies and then to proceed to knock them down. Unfortunately many of your readers—unacquainted with the details of the report—are not in a position to recognise the game.

Dr. Southgate says "that for the committee to announce as a test the smell of alcohol in the breath is unsound and utterly unscientific." When Sir William Willcox replies that the committee never pledged itself by any statement in its report to being able to find any smell in alcohol, and that the smell of alcoholic liquor in the breath was considered of value only as an indication that the person had recently consumed alcoholic liquor Dr. Southgate calls the reply a quibble. Then again, Dr. Southgate asks for "the source of evidence which proved conclusively to the committee" that "in the performance of complex occupational acts such as the driving of a motor-car an experienced driver might be little affected by relatively large amounts of alcohol since his long experience of driving had caused his control of his car to become almost automatic." As the committee's report contains no such statement the question does not arise. Possibly we shall be told that this reply also is a quibble.

May one in return venture to ask Dr. Southgate certain questions. He writes, "surely it will be of service to the presiding magistrate to be able to state from a quantitative analysis of the urine that the accused must have taken at least so much alcohol." As the magistrate is concerned only with determining whether at the time of the event the accused was "drunk" (as defined by the committee in its report) of what value will it be to know this? Does Dr. Southgate suggest that a certain well-defined concentration of alcohol in the urine can be taken as the index of being "drunk" for all persons at all times and under all circumstances? If so will he name this concentration, and will he say that a less concentration can be taken as the index of not being "drunk"? But if he is not prepared to do so, then wherein does he differ from the committee which considered this concentration inquiry was of "great value from a scientific point of view," but not to be practicable for the purpose of defining "drunk"?

I am, Sir, yours faithfully,

Hove, May 7th, 1927. E. ROWLAND FOTHERGILL.

MEDICAL DEFENCE.

To the Editor of THE LANCET.

SIR,—We are directed to request that you will kindly publish the following statement with regard to the circumstances in which the Council of either of the two English Defence and/or Protection Societies may be prepared to advise and/or defend and/or indemnify a member.

Subject to the provisions of the Articles of Association the Council may on application from a member who is in benefit—

1. Advise on any matter connected with medical practice.

2. Initiate or defend or assist in defending proceedings where a question of professional principle is involved.

3. In the event of an adverse verdict, or of a settlement out of court, provide indemnity against damages and costs of the other side.

4. Defend or initiate and carry through proceedings to vindicate a member's professional interests, honour, or character whenever they have been threatened or jeopardised.

5. Defend and/or indemnify a member in proceedings brought against him in respect of the act or omission of (*a*) a partner who is a member of any other defence or protection society with whom a reciprocal arrangement has been entered into; (*b*) an assistant who is a member of any other defence or protection society with whom a reciprocal arrangement has been entered into; (*c*) an assistant not himself a member of any defence or protection society, provided that the member has paid an additional annual subscription of 10*s.*; (*d*) a locum tenens, whether a member of any defence and/or protection society or not; (*e*) a subordinate medical officer, including a house surgeon or similar hospital medical officer, whether a member of any defence and/or protection society or not; (*f*) a non-medical assistant or subordinate, such as a nurse, dispenser, X ray operator, masseuse, or laboratory assistant, save in a case where in the opinion of the Council such non-medical assistant or subordinate was with the sanction of the member, whether express or implied, carrying out; (i) a duty which should only be undertaken by a medical practitioner, or (ii.) without supervision a duty which should only be undertaken by a non-medical assistant or subordinate under the orders and direct supervision of a medical practitioner.

We are, Sir, yours faithfully,

HUGH WOODS,
General Secretary,
The London & Counties Medical Protection Society, Ltd.,
Victory House,
Leicester-square, W.C.

JAMES NEAL,
General Secretary,
The Medical Defence Union, Ltd.,
49, Bedford-square,
W.C.

May 7th, 1927.

[1] Reports of Medical Cases, 1830, ii., 514.
[2] Guy's Hospital Reports, 1836, i., 9.
[3] Guy's Hospital Reports, 1837, ii., 279.

THE EARLY TREATMENT OF CHILDISH AILMENTS.

To the Editor of THE LANCET.

SIR,—It may be of interest to your readers to learn that at the Royal Cambrian Institution for the Deaf and Dumb, with its 80 resident pupils, the average drug bill for the last seven years has not exceeded £10. Included in this amount are items for dressings, cod-liver oil, and syrup of hypophosphates, and although the amount is low the health-rate has been excellent.

I have been the honorary physician to this institution for 22 years, and consistent with the sound health of the pupils it is to my advantage to have as few calls as possible. Fortunately for me the matron realises that it is much easier to keep the children well than to cure them when ill; as a consequence she phones me at once as soon as any sign or symptom suggesting a departure from normal health makes its appearance. Taken at such an early stage most of the illnesses resolve themselves into something starting from the stomach, and in nearly every case a few doses of calcium permanganate or Condy's fluid brings about a termination of the embryonic gastritis. It is astonishing the readiness with which cases of feverishness rising to 103°–104° F. respond to the permanganate, in my opinion much more satisfactorily than they do to drugs of the salicylic group, especially as the latter nearly always leave some reactionary after-effect. In cases of inflamed pharynx the matron immediately swabs the throat with petrol, which has the effect of clearing away all evidence of spots or patches within three days. Externally petrol is applied to all cuts and scrapes, so as to wash away grease and the dirt bound up with it; on evaporation the wound is left clean and dry, and ready for a dry dressing. The early application of first-aid treatment of this sort is responsible for the infrequent appearance of impetigo.

Nearly all the children, whose ages vary from 6–16 years, come to the institution from local education authorities, with the result that most of the treatment is required at the beginning of a term, being devoted to counteracting the evil results of the holidays. One cannot help feeling that the school medical officers with their large staff of nurses might do more for these children whilst they are in their school districts during the holidays. The ignorance which exists as to the proper methods of educating children of this sort is immense and visits by nurses and even by school medical officers would enlighten not the parents but the medical staff too.

I am, Sir, yours faithfully,

Swansea, May 4th, 1927. G. ARBOUR STEPHENS.

DALRYMPLE HOUSE: TREATMENT OF INEBRIETY.—We have received the combined report of the Homes for Inebriates Association and of Dalrymple House, Rickmansworth, which is managed by a committee of this body and which has now completed its forty-third year of successful treatment of drink and drug addicts. The profits are expended on improvements in the home, and no member of the Association benefits financially from the enterprise. At the end of last year 21 patients were in residence; 7 private and 14 under the Inebriates' Act, as against 12 and 9 respectively at the beginning of the year. Seventy were admitted and 69 discharged during the year under review. Of these only three were drug addicts, all medical practitioners. The superintendent, Dr. F. S. D. Hogg, lays stress on the evil results of drinking methylated spirit, and refers to recent work describing the legal precautions that have been found necessary in the United States. One of his patients was almost blind on admission from this cause, and another was mentally enfeebled—he fears permanently. Dr. Hogg does not give details of the treatment used, but appends a very complete analysis of a group of 1645 patients consecutively discharged. Of these 1419 left after the efflux of time, 31 because further treatment was unnecessary, the remainder from illness, private affairs, or unsuitability for treatment; 48 suffered from heart disease and 47 from kidney trouble. This appendix will interest all those concerned with the treatment of inebriety.

Parliamentary Intelligence.

HOUSE OF LORDS.

WEDNESDAY, MAY 4TH.

EXPERIMENTS ON ANIMALS.

Lord BANBURY asked the Government the number of inspectors appointed under the Cruelty to Animals Act, 1876. He said he did not wish to make any accusation or charge against the inspectors under this Act. He did not know who they were and he had no reason to doubt that they were doing their duty in a proper and efficient manner, if it was within their power to do so. Since he put this question down the Home Secretary, in answer to a question in the House of Commons, had said that there were two whole-time inspectors, and that the last occasion on which they had interfered in order to prevent an animal from suffering prolonged and agonising pain was on March 25th, 1926. He would like to ask the noble lord, who would answer for the Government, how he could justify the statement made by professors and doctors that there never was any cruelty at all, and that the inspectors might be trusted to carry out the Act, because there were humane people who in no circumstances whatever did anything contrary to the Act whether an inspector was present or not? How many places were licensed for the purposes of these operations? He gathered from the answer to another question in the House of Commons on April 11th of this year that 242 places had been licensed. There were only two inspectors to inspect those 242 places. In 1925, which was the last date on which returns from the Home Office had been given, there were 209,014 experiments. Of these 9402 were done with anæsthetics, and the balance of 199,612 were done without anæsthetics, and were, he presumed, injections or experiments of that nature, and therefore not calculated perhaps to cause any pain. He would point out, however, that these injections might be very likely after a time to cause intense suffering if disease was inflicted as a result of the injections. In regard to the experiments with animals under anæsthetics each inspector would have to inspect 4701 experiments in a year in 242 different places. In University College alone, according to an answer given in the House of Commons on Dec. 13th last, in the case of dogs only there were 1147 experiments in two years. There were 574 animals experimented on in one year and only one class of animal was used, and yet the number of inspectors was only two. During the whole of his (Lord Banbury's) political career he had been an apostle of economy and he did not wish in any way to cause additional expenditure, but in a case of this sort, where the additional expenditure would probably not be more than £3000 or £4000 a year, he thought that it was necessary as long as these experiments were allowed that the Act of 1876, which specially insisted upon inspectors being appointed, should be carried out in a proper manner. No one could say that with the large number of experiments which were carried out, and with 242 places licensed, two men, however excellent they were, could possibly carry out their duties in a proper manner. The fact that last year one of these inspectors had to interfere because an experiment was not being carried out in a proper way showed that it was absolutely necessary that there should be an increase in their number.

Lord DESBOROUGH, replying for the Home Office, said that down to 1913 there were two part-time inspectors for Great Britain—Sir George Thane and Sir James Russell—who combined the work of inspection with that of other scientific posts which they held. In 1912 a Royal Commission was appointed and that Commission suggested that there should be four whole-time inspectors. In 1913 two whole-time inspectors were added to the existing two part-time inspectors. On Sir James Russell's death the number was reduced to three. Sir George Thane was nominally a part-time inspector, but during the last two years of service he gave practically the whole of his time to the work. When Sir George Thane retired in May, 1922, the staff was reduced to two whole-time inspectors, solely on the ground of the necessity for economy in public expenditure, which still continued. From the point of view of efficiency of administration a larger staff was desirable, and the Home Office agreed with his noble friend on that point. From the point of view of efficiency three whole-time inspectors would not be too many, and four would be still better. But he did not think that the point of view of Lord Banbury who suspected violation or evasion of the law need be seriously taken into account. Licence holders did sometimes commit serious breaches of the Act, or the conditions of their licences, but it was almost invariably due merely to negligence or to failure to understand a somewhat intricate and technical piece of legislation. Wilful evasion of the Act was practically unknown. On the contrary, the

experience of the Home Office for many years had been and still was that licence holders as a body were willing and anxious to comply with the letter and spirit of the Act and to assist the Home Office in its administration. While the Home Office agreed that it would be better to have more inspectors he could not hold out any hope in view of the need for economy that they would be willing to approach the Treasury for more money. He thought that the inspections were carried out as well as they possibly could be in the circumstances. He saw a letter in a newspaper not long ago from a distinguished scientific man, Prof. Julian Huxley. He referred to a reply made in the House of Commons by the Home Secretary from which it appeared that in the last 18 months the laboratories of University College were visited by an inspector 30 times without notice. University College was specially singled out because he believed that there were more experiments carried out there than at any one place in the world. That seemed to indicate a considerable amount of efficiency notwithstanding that the inspectors were somewhat short-handed. Of course they had a great deal more to do than merely to inspect. They had to be highly qualified persons who were able to give advice when applied to by schools which wished to carry out some very special piece of scientific work; and it would undoubtedly be a great benefit to the country not only in this direction but in many others if they could afford the money for increasing their number.

Viscount HALDANE said he was chairman of the Vivisection Committee for some time and had the superintendence of the work that was done in the Home Office in connexion with the reports of the inspectors. He was sorry to hear economy put up as a plea for not appointing more inspectors; even Lord Banbury would not invoke that sacred word. But he comforted himself by this, that he did not think that an increase in the number of inspectors would make very much difference. Lord Banbury was mistaken in supposing that the inspectors actually supervised the conditions under which the experiments were carried out. That was not necessary. Under the Act of 1876 a person could not perform an experiment unless he had a licence and that licence was not issued unless the inspectors were satisfied. The great bulk of the work was paper work on the nature of the research to be made, and whether it involved pain. The inspectors paid occasional visits in order to see that the conditions of the law were being observed. He bore out from such experience as he had gained that there was very little violation of the Vivisection Acts in this country. If there was any it was always heard of by responsible people and they stopped it. The professors and persons concerned were very anxious not to have any scandal in connexion with the law. So far from thinking that the Vivisection Acts did not go far enough he was not sure that they did not go too far. It was only a few days since he saw a very distinguished young physiologist who had come to London to see him. He asked him what brought him there, and he replied: "There is an experiment which has to be made and should be made on a dog. It is not at all serious, but it cannot possibly be made under an anæsthetic. It involves taking out some of the spinal substance and some of the arterial blood and the observations must be taken without an anæsthetic. There is only one way for it, and I have come up to be vivisected," and he was vivisected. For several days he was in one of the hospitals, remaining in bed during part of the process. He (Lord Haldane) mentioned that as showing that some of the experiments which were stopped by the Act were experiments which human beings with a desire for knowledge were ready to undergo. He did not think that it was desirable that that should be extended. A certain amount of experiment on animals was absolutely essential with the kind of diseases which existed to-day, requiring wholly new knowledge. How such researches as those of Dr. Banting on insulin could have been carried out without vivisection he did not know. He was sure that some of the provisions of the Vivisection Acts went so far that although processes were quite painless they were hampered by the condition that anæsthetics must be strictly used and that the animal must not be allowed to live. He said these things for the purpose on the whole of supporting the view taken on behalf of the Government. He thought it would be a good thing to have another inspector of eminence, but his work would be very largely paper work.

Viscount KNUTSFORD said that everybody wanted to protect animals from cruelty, and if an addition to the number of inspectors would satisfy those who shared the sentiments of Lord Banbury, or would save them from the repetition of his speech every year, it might be worth the £2000 or £3000 a year which the Home Office said it would cost. Lord Banbury had told the House about the vast number of experiments—as many as 209,000; but the removal of a flea from one dog to another was an experiment under the Act. The 209,000 experiments did not all need an inspector. One could not make any experiment on an animal except at a licensed place. Lord Banbury said there were 242 licensed places. He (Lord Knutsford) thought that the correct figure for England and Scotland was 267.

Lord BANBURY said he was speaking of England and Wales.

Viscount KNUTSFORD said that a great many of the places were in one building. There were 68 of the 267 in London alone. That being so a very large number of the licensed places could be visited in a few minutes. He desired that the laboratories should be properly inspected, but two whole-time men could in the opinion of a great many people do the work perfectly well. Two instances had been given of the way in which the law was broken. One lady immersed some trout in polluted water; she did not know that she had to get a licence for that. The other irregularity was that a licensee holding a certificate "A" made simple inoculations into cats without authority. Of course she had no business to do that, but those were the irregularities last year. He thought that to appoint two more men at £3000 a year it would be a waste of money and he was glad that the Government did not intend to do it.

Lord DANESFORT said he was not an antivivisectionist. He realised that for purposes of research there were cases in which it was necessary to inflict pain upon animals, but he felt very strongly that pain should never be inflicted except for purposes of research and under restrictions which while they did not unduly embarrass scientific work would avoid unnecessary pain to animals. He would be very sorry to see the powers given by the Act of 1876 to vivisectionists extended. Those who framed and passed the Act of 1876 intended the system of inspection to be a reality. Notwithstanding the recommendation of the Royal Commission in 1912 that there should be four whole-time inspectors there were now only two. Lord Knutsford thought that two were sufficient, but in his (Lord Danesfort's) opinion the weight of evidence was against Lord Knutsford's view.

Lord BANBURY said Lord Desborough had admitted that breaches of the licence did occur, but he said they were not wilful, being due to ignorance. The result, however, to the animal operated on was the same in either case. That was one of the reasons why he thought there should be more inspectors and he trusted that the question of economy would not prevent the Home Office from adopting that course.

HOUSE OF COMMONS.

WEDNESDAY, MAY 4TH.

Herrings Treated with Dye.

Mr. JOHNSTON asked the President of the Board of Trade whether his attention had been drawn to recent instances where herrings treated with dye had been sold as kippers; whether he was aware that in one instance boxes of kippers coloured with dyestuffs were supplied to a Colchester retailer at 2*s.* 4*d.* per box, and retailed by him at 12*s.* 10*d.* per box, and what steps he could take to safeguard the public in this regard.—Mr. GUINNESS (Minister of Agriculture) replied: I am aware that it is the practice of some curers to use dyes for improving the appearance of herrings sold as kippers, but there is no power to prevent this practice unless the colouring material used is injurious to health. With regard to the last part of the question the whole subject of the price of fish is now being investigated by the Food Council.

Sulphur-dioxide as Meat Preservative.

Mr. HERBERT WILLIAMS asked the Minister of Health whether his attention had been drawn to the decision of the Board of Health in Scotland to allow the use of sulphur dioxide as a preservative for minced butcher meat during the months of June, July, August, and September in any year; and whether, having regard to the higher average temperature in England and Wales, he would consider introducing the same regulations.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: My right hon. friend is aware of the decision of the Scottish Board of Health, but as at present advised does not propose to modify the regulations as issued in regard to meat.

Prisoner Suffering from Encephalitis Lethargica.

Mr. ERNEST BROWN asked the Home Secretary whether his attention had been called to a case at the Central Criminal Court in which a victim of sleepy sickness was sent to prison with hard labour, although the judge thought the mother was right in saying that the prisoner required treatment not as a criminal but as an afflicted person; and whether he would consider this case with a view to the remission of the sentence.—Sir WILLIAM JOYNSON-HICKS replied: Yes, Sir; my attention has been called to this case. The prisoner in question is reported to have suffered from encephalitis lethargica in 1919, but he is not at present considered to be certifiable under either the Lunacy or the

Mental Deficiency Acts; he is, however, being kept under special mental observation in the prison hospital. All the relevant facts were before the learned judge when he decided to send the young man to prison, and after careful consideration I have come to the conclusion that I would not be justified in advising any remission of sentence.

THURSDAY, MAY 5TH.

London Police and First-aid.

Mr. DAY asked the Home Secretary how many small field-dressing outfits had been supplied to the mounted police in the Metropolitan police area for the purpose of first-aid; whether first-aid was also rendered where necessary to horses in the streets of London; what was the cost of these outfits; and on how many occasions they had been used to the last convenient date.—Sir WILLIAM JOYNSON-HICKS replied: No field-dressing outfits have yet been supplied but 300 dressings have been ordered. It is proposed that mounted police shall render first aid where necessary to horses in the streets if the driver consents. The cost is £12.

Departmental Committee on Solicitation Laws.

Dr. SHIELS asked the Home Secretary if the proposed departmental committee on the solicitation laws would include Scotland in its sphere of inquiry; would Scotland be given representation on the committee, and, if that was not considered practicable, would a separate Scottish committee be appointed. Sir PATRICK FORD asked a similar question.—Sir WILLIAM JOYNSON-HICKS replied: It is intended that the proposed inquiry should extend to Scotland and that a person residing in Scotland should be appointed to the Committee.

Price of Parlour Houses.

Mr. HERBERT WILLIAMS asked the Minister of Health how the contract price for parlour houses now compares with the price before the announcement of the reduction of the subsidy.—Mr. CHAMBERLAIN replied: The average price of parlour type houses included in contracts let by local authorities during the three months ended in March last was £490, as compared with an average price of £513 for the previous December quarter.

Massage and Electrical Treatment for Insured Persons.

Mr. BOWERMAN asked the Minister of Health whether in view of the recommendation of the Royal Commission on National Health Insurance that massage and electrical treatment be added to the list of additional benefits, he would consider the desirability of promoting a scheme whereby such treatment might be obtainable without difficulty for insured persons if and when the treatment had been prescribed for them.—Mr. CHAMBERLAIN replied: In the event of massage and electrical treatment being added to the list of additional benefits, I should be prepared to give all possible assistance to approved societies, with the object of securing for their members the opportunity of obtaining the necessary treatment under satisfactory conditions and on reasonable terms. I should, however point out that before any regulation could be made adding the treatment in question to the list of additional benefits, I should have to be satisfied that a reasonable number of societies desired to amend their existing schemes of additional benefits and to divert to massage and electrical treatment some of the money at present allocated to other treatment benefits.

Medical Officer's Dispute with Local Authority.

Mr. JOHNSTON asked the Secretary of State for Scotland whether he was aware of the prolonged correspondence between the parish council of Strath, Skye, and the Scottish Board of Health relative to a dispute over the continuance of the present medical officer for the parish in his appointment, and that the council had intimated its unanimous intention of resigning unless it was given freedom of action in terminating the present appointment and in securing possession of the house tenanted by the present medical officer for the parish, and what steps, if any, he proposed to take in the matter.—Sir JOHN GILMOUR replied: I am aware of the present circumstances of the medical service in the parish of Strath and have myself been in correspondence with the parish council in the matter. By Section 3 (5) of the Highlands and Islands (Medical Service) Grant Act, 1913, the parish medical officer cannot be dismissed from his post without the consent of the Scottish Board of Health. In pursuance of their duty under that section the Board ordered an inquiry into the medical service in this parish and appointed a senior member of the Scottish Bar as Special Commissioner for that purpose. The Commissioner found that certain professional charges brought against the parish medical officer had not been substantiated and ought never to have been made, and also that there was no other ground on which his dismissal from the parish appointment would be justified. After consideration of the Commissioner's report the Board decided that this was a case which clearly called for the protection afforded to parish medical officers in the Highlands and Islands by the section referred to, and I entirely concur in that decision.

Small-pox at Hendon and Golders Green.

Mr. DAY asked the Minister of Health the total number of small-pox cases that had been reported from Hendon and Golders Green to date in the recent outbreak; the number of deaths resulting, and what, if any, special precautions had been taken to prevent any further cases occurring.—Mr. CHAMBERLAIN replied: Eight cases have occurred in the Hendon Urban District which includes Golders Green, and four deaths have resulted. As soon as the nature of the disease was determined all the usual preventive measures were adopted by the local authority, and a medical officer of my department has rendered assistance.

MONDAY, MAY 9TH.

School Medical Service.

Dr. VERNON DAVIES asked the President of the Board of Education the number of school-children examined at schools by the medical officers of the Lancashire education authority for each of the last seven years for which statistics were available; the number of medical officers employed in this work and the salaries and emoluments paid to these officers, and the average cost of medical services for each examination made.—Lord EUSTACE PERCY replied: The following is the information asked for:—

Financial year.	Medical officer staffs.*	Estimate of total salaries in respect of School Medical Service.	No. of inspections (routines, specials, and reinspections.)
		£	
1921–22 ..	151/4	15,765	74,246
1922–23 ..	151/4	16,528	79,822
1923–24 ..	124/5	13,315	80,927
1924–25 ..	124/5	12,239	71,538
1925–26 ..	133/5	13,167	67,465
1926–27 ..	133/5	13,087	†95,106

* Estimated equivalent of whole-time officers engaged in School Medical Service work. The work of these officers is not confined solely to medical inspection, but includes many other duties connected with the School Medical Service.

† Includes special examinations of children in connexion with school feeding during the coal dispute.

Comparable figures for the year 1920–21 are not available. It is not possible to state the average cost of medical services for each examination made, as the school doctor's work includes many other duties connected with the School Medical Service besides medical inspection.

Deaths from Small-pox.

Lieut.-Colonel HOWARD-BURY asked the Minister of Health how many deaths had been due to small-pox during the present year in this country.—Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied: Twenty-seven deaths among persons suffering from small-pox have so far been reported in England and Wales during the present year, but in some cases the death certificates have not yet been received.

Colonel HOWARD-BURY asked if the Ministry of Health were taking any steps, in view of the danger of an epidemic, to recommend vaccination.

Sir K. WOOD replied that they were doing all they could in that direction.

Commander WILLIAMS asked if the Department were drawing the attention of the school authorities to the very great need of encouraging vaccination.

Sir K. WOOD said that the Department were doing all they could in that direction.

Housing Schemes in Scottish Rural Areas.

Mr. SKELTON asked the Secretary of State for Scotland the number of local authorities in Scotland responsible for submitting schemes under the Housing (Rural Workers) Act, 1926; how many had submitted schemes, and how many such schemes had been approved by the Scottish Board of Health.—Sir J. GILMOUR replied: Though the provisions of the Housing (Rural Workers) Act, 1926, apply particularly to rural areas, any local authority may submit a scheme under the Act if they consider that within their area there are persons of the classes specified in the Act for whom approved accommodation should be provided. Thirty-two local authorities in Scotland have submitted schemes and 28 of these schemes have been approved by the Scottish Board of Health.

TUESDAY, MAY 10TH.

The Health of the Army.

Sir BASIL PETO asked the Secretary of State for War whether he was aware that the reports on the health of the army for 1923 and 1924 were only published in 1926; and whether he could take steps to see that the reports for 1925 and 1926 were published at an early date, and that, in future, these reports should be published within a reasonable time of the period to which they related.—Sir L. WORTHINGTON EVANS replied: During the past two years special steps have been taken to bring the issue of these reports up to date, and the reports for 1922, 1923, 1924, and 1925 have all been published since the beginning of 1925, that for 1925 having been issued two months ago. My hon. friend will appreciate that the collection and collation of information and statistics from all parts of the world makes it impossible for publications of this kind to appear close on the period to which they relate.

House Construction since the War.

Mr. TAYLOR asked the Minister of Health the total number of houses, whether subsidised or not, built each year in England and Wales since the war.—Mr. CHAMBERLAIN replied: The following is a statement showing the number of houses completed during each year ended in March, since 1919:—

Year.	With State assistance.	Without State assistance.	Total.
1920.. ..	715		
1921.. ..	28,549	53,800 (*a*)	251,988
1922.. ..	101,071		
1923.. ..	67,853		
1924.. ..	18,664	67,546	86,210
1925.. ..	67,669	69,220	136,889
1926.. ..	106,987	66,439	173,426
1927.. ..	153,779	64,200 (*b*)	217,979
Total ..	545,287	321,205	866,492

(*a*) Separate figures are not available for the years 1920–23, and the number is based partly on an estimate.
(*b*) This figure includes an estimate of 33,000 for the half-year ended March 31st, 1927. Final figures for this half-year are not yet available.

Uses of Machine-skimmed Milk.

Brigadier-General CLIFTON BROWN asked the Minister of Health (1) what are the principal articles of food for which imported machine-skimmed milk was used; and (2) whether the 88,000 tons of machine-skimmed condensed milk imported last year into this country was all used for human consumption, or whether some of it was used for other trade purposes; and, if so, for what purposes.—Mr. CHAMBERLAIN replied: So far as I am aware, all the machine-skimmed condensed milk referred to was imported for human consumption, including various manufacturing and household uses. I regret that I have no information which would enable me to state in detail the principal articles of food in which it is used.

Meal Relief for Night Telephonists.

Viscount SANDON asked the Postmaster-General whether night telephonists got an uninterrupted meal relief, and if accommodation was provided for rest; and, if not, whether he would take steps to provide these.—Sir W. MITCHELL-THOMSON replied: In a large number of cases night telephonists have a scheduled meal relief on all-night attendances. In other cases a meal relief could not be scheduled without bringing a relief officer on duty for a short period at an unreasonable hour, but the calls during certain hours of the night are so infrequent that in practice the men can take meals without difficulty. It is not considered necessary to provide special accommodation for rest, as night telephonists are paid for wakeful attention, and their weekly attendance is only 45 hours.

MARRIED WOMEN MEDICAL OFFICERS.—Durham County Council has decided to give three months' notice terminating the appointments of married women officers on its medical staff whose husbands are in receipt of adequate incomes.

REBUILDING BRADFORD ROYAL INFIRMARY.—It is hoped that the foundation-stone of the new infirmary will be laid in October. The total cost of the building is expected to be £500,000, and the first instalment is to be a self-contained ward block which will cost £75,000. The site is in Duckworth-lane, on the outskirts of the city, and the late Mrs. Harry Smith, who formerly lived on the site, has bequeathed a sum of about £15,000 to the institution. An individual donor has promised £30,000, and a group of friends has made itself responsible for the building of a wing.

Medical News.

UNIVERSITY OF OXFORD.—At a Congregation held on May 5th the degree of Doctor of Medicine was conferred on H. St. H. Vertue and C. F. T. East.

UNIVERSITY OF CAMBRIDGE.—At a Congregation held on May 7th the following degrees were conferred:—
M.B. and B.Chir.—D. Riley.
M.B.—H. L. Wilson.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination held from April 4th to 29th the following candidates were approved in the undermentioned subjects, but are not eligible for diplomas:—

Medicine.—S. I. Abrahams, Guy's; Mary E. A. Allen, Birmingham; N. H. Allen, Guy's; B. J. E. Anson, King's Coll.; J. F. Bell, Liverpool; W. Blayney, St. Thomas's; Rosalind V. Carruthers, Oxford and King's Coll.; J. T. Chesterman, Bristol; L. H. Crosskey, Birmingham; Alva A. Daniell and Ethel G. Davies, Royal Free; S. B. Davis, London; J. S. Dinsdale, Leeds; O. C. Dobson, Durham; G. C. Dorling, London; W. E. Dornan, Leeds; J. C. E. Dusseau, Toronto; A. Erian, Cairo and St. Bart.'s; G. S. Ferraby, King's Coll.; J. Fitzsimons, Otago and Middlesex; Helen G. Gifford, Birmingham; R. V. Goodliffe, St. Bart.'s; C. D. Gun-Munro, King's Coll.; Eunice M. Hatch St. Mary's; R. E. Havard, Guy's; Laurel K. Heny, Royal Free; B. R. Irani, London; Alison R. Kerridge and Margaret Leathes, Royal Free; P. H. Loretz, Guy's; Ma Y. May, Royal Free; Marjorie H. Mills, Birmingham; C. S. Morgan, St. Thomas's; M. N. Patel, London; M. G. Pearson, Westminster; E. U. H. Pentreath, St. Bart.'s; Mary E. Percy, Birmingham; Monica M. M. Power, St. Mary's; H. L. Rees, King's Coll.; J. H. Richmond, Guy's; W. V. Roache, St. Bart.'s; V. H. Sarland, Birmingham; D. P. H. Schafer and N. T. H. Schafer, London; N. L. Shepperd, King's Coll.; F. Smith, Birmingham; Eileen R. B. Snow, St. Mary's; P. A. M. Soutter, Westminster; Ruth M. W. Turner, Cambridge and St. Mary's; K. S. A. Venkatachala Ayyar, Madras and Guy's; Nora W. Wamsley, Charing Cross; D. Wardrop, Birmingham; A. G. Watkins, Univ. Coll.; Margaret A. Willcox and F. C. Wilson, King's Coll.; W. M. Wilson, St. Bart.'s; and Dorothy L. Woodroff, King's Coll.

Surgery.—Joan Anderson, Manchester; J. H. Attwood, St. Bart.'s; I. Bakhsh, Guy's; P. V. Bamford, London; A. C. H. Bell, St. Bart.'s; F. W. Besley and L. Blackstone, London; H. E. Blake, St. Thomas's; O. Bode, London; Ruth N. Brittan, Royal Free; W. H. Brown, St. Mary's; C. E. S. Bullen, Leeds; E. L. Butler, Birmingham; J. K. Cameron, Liverpool; J. T. Chesterman, Bristol; J. P. Collinson, Sheffield; R. W. Cooper, Middlesex; S. Craddock, St. Mary's; T. S. Daniels, Guy's; A. F. J. D'Arcy, St. Mary's; E. L. Davies, Univ. Coll.; W. A. Davies, Liverpool; S. B. Davis, London, S. Deaner, St. Mary's; J. S. Dinsdale, Leeds; C. B. Drew, St. Thomas's; E. D. Dunnill, Guy's; T. Edmunds, St. Thomas's; Muriel F. M. Evans, Charing Cross; M. Farid, Cairo and Birmingham; R. B. Floyd, Manchester; H. W. Frickel, St. Mary's; H. L. Fuller, Bristol; C. E. Gallagher, Guy's; Helena M. Gambrell, Royal Free; G. G. Gillam, Univ. Coll.; J. C. Gordon, St. Bart.'s; M. K. Gyi, Guy's; G. A. S. Harris, St. Bart.'s; Phyllis N. Hooper, Cardiff; A. L. Hyatt and P. Inwald, Middlesex; E. D. Irvine, Liverpool; L. A. Jacob, St. Thomas's; E. T. James, St. Bart.'s; H. E. James, Univ. Coll.; J. L. G. Jenkins, St. Bart.'s; P. D. Johnson, St. Thomas's; O. T. Jones, St. Bart.'s; R. T. Jones, Guy's; Lily A. Jörgensen, Royal Free; C. S. Kah, St. Thomas's; E. R. Keeble and W. R. Keizer, London; M. Koettlitz, St. Thomas's; A. Konig, Middlesex; A. H. Lafone, St. Mary's; T. E. Lamech, St. Thomas's; L. E. Lane, Guy's; D. A. Langhorne, St. Bart.'s; J. A. Lee, Newcastle-on-Tyne; F. G. Leslie, London; A. W. Lilley, Manchester; Edith G. Limmex, King's Coll.; F. E. Lipscomb, Middlesex; F. E. Lomas, Liverpool; A. Long, Leeds; J. McHugh, Liverpool; M. A. Mahmood, Punjab and Middlesex; Muriel M. Manley, St. Mary's; A. M. A. Moore, London; E. G. Muir, Middlesex; Lois J. Ogle, Royal Free; V. E. Palmer, St. Thomas's; Ethel E. A. Pepper, Royal Free; G. M. Phadke, Univ. Coll.; R. F. Phillips, St. Bart.'s; O. Plowright, Guy's; J. C. Preston, Manchester; R. C. Probyn-Williams, Oxford and London; W. J. E. Fadford, Guy's; P. R. Rainey, St. Bart.'s; J. R. Rickett, Guy's; L. G. R. Roberts, Liverpool; I. M. Robertson, St. Bart.'s; D. A. Rolfe, Birmingham; E. ap I. Rosser, St. Bart.'s; R. W. Sabonadiere, St. Thomas's; P. G. Salt, St. Bart.'s; E. J. Silverman, Middlesex; T. E. N. Simpson, Liverpool; A. Sirry, Birmingham; Hilda W. Slack, Royal Free; Joan Staddon, King's Coll.; T. R. Stevens, St. Thomas's; S. Le R. Switzer, London; V. J. M. Taylor, Liverpool; H. S. Thomas, Melbourne and Middlesex; L. G. Thomas, Liverpool; R. G. Thomas, St. Thomas's; E. C. Till, Guy's; J. R. Unger, Middlesex; J. A. Vernon, Guy's; M. R. Wadia, Bombay; G. A. B. Walters, St. Thomas's; E. N. Wardle, Liverpool; J. R. S. Webb, St. Thomas's; P. H. Whitaker, Liverpool; P. C. Wickremesinghe, Ceylon and Guy's; S. T. Williamson, Guy's; W. A. Wood, St. Bart.'s; and R. L. Wynne, Liverpool.

Midwifery.—G. J. Ahern, London; Florence M. Allen, King's Coll.; Mary E. A. Allen, Birmingham; F. W. Allinson, S. W. Allinson, Univ. Coll.; A. F. Alsop, St. Bart.'s; R. Anderson, Cambridge and Birmingham; S. W. K. Arundell, Middlesex; I. Bakhsh, Guy's; Gertrude C. Banks, Royal Free; D. S. M. Barlow, Univ. Coll.; Katherine Barnett, Charing Cross; H. L. W. Beach, St. Bart.'s; W. V. Beach, Guy's; A. C. H. Bell, St. Bart.'s; O. Bode, London; S. G. Budd, Cardiff; E. L. Butler, Birmingham; J. K. Cameron, Liverpool; Eleanor M. Charless, Royal Free; Rosalind V. Carruthers, King's Coll.; C. S. Carter; St. Mary's; B. Cimbelmann, Middlesex; Amy G. Clogg, King's Coll.; R. E. P. Cohen, Birmingham; N. B. Colman, St. Bart.'s; J. F. Crabtree, Manchester; W. S. Creer, Liverpool; L. H. Crosskey, Birmingham; Mona C. Davies, Charing Cross; S. Deaner, St. Mary's; J. De Rosa, London; P.M. Deville, Guy's; P. Dickman, Charing Cross; A. Dodd, Liverpool; D. E. Dunnill, Guy's; Evelyn Durrance, Royal Free; W. J. Eastwood, Liverpool; T. Edmunds, St. Thomas's; M. M. El Toubi, Sheffield; Alexandra G. H. English, Royal Free; A. Erian, Cairo and St. Bart.'s; I. B. Ewart, Edinburgh; J. A. Fernandez, Univ. Co..; G. S. Ferraby, King's Coll.; F. Forty, Univ. Coll.; Agnes B. Francklyn, St. Mary's; J. L. Franklin, Cambridge and St. George's; H. L. Fuller, Bristol; Helena M. Gambrell, Royal Free; S. L. Gargye, Manchester; A. M. Ghaith, Birmingham; Christina Gibson, King's Coll.; Helen G. Gifford, Birmingham; S. Gifford, St. Thomas's; G. G. Gillam, Univ. Coll.; S. Goldman, London; R. V. Goodliffe, St. Bart.'s; P. S. Goonewardene, Ceylon; Tatiana Gourlande, St. Mary's; E. L. Graff and C. S. Gross, Guy's; C. D. Gun-Munro, King's Coll.; P. E. T. Hancock, Cambridge and St. Bart.'s; I. G. Hardinge, Charing Cross; A. S. Hatch, Univ. Coll.; Emily C. Hill, Liverpool; H. Hillaby, St. Bart.'s; J. L. Holt, Manchester; G. M. Housden, E. H. Hudson and W. F. Hudson, Guy's; E. D. Irvine, Liverpool; S. D. Isaacs, Birmingham; Agnes H. Jackson, King's Coll.; L. O. Jaggassar, St. Mary's; H. E. James, Univ. Coll.; I. J. Jones, St. Thomas's; E. R. Keeble, London; A. K. M. Khan, St. Thomas's; K. Knowles, St. Bart.'s; M. Koettlitz and T. E. Lamech, St. Thomas's; Nellie I. Lanckenau, Univ. Coll.; L. J. Lawrie, London; J. A. Lee, Durham; F. E. Lipscomb, Middlesex; F. E. Lomas, Liverpool; R. A. McCance, King's Coll.; W. S. McConnell, Guy's; Jane S. McDowell, Charing Cross; J. McHugh, Liverpool; M. S. Mahmood Middlesex; Marjorie V. Martin, Birmingham; E. W. Martindell, Univ. Coll.; Margaret I. Meacock, Westminster; Hermia M. Mills, Royal Free; Marjorie H. Mills, Birmingham; R. V. Mone, and T. Morton, St. Thomas's; E. G. Muir, Middlesex; J. B. Murray, St. George's; W. H. Myburgh, Guy's; Lois J. Ogle, Royal Free; R. Oliver, Univ. Coll.; J. R. Peacock, St. George's; T. Pearce, Liverpool; M. V. P. Petris, St. Thomas's; P. I. Peltz, St. Bart.'s; Ethel E. A. Pepper, Royal Free; Mary E. Percy, Birmingham; G. M. Phadke, Univ. Coll.; R. F. Phillips, St. Bart.'s; O. Plowright, Guy's; C. D. Politeyan, Cambridge and St. Thomas's; J. W. Pugh, Univ. Coll.; W. J. E. Radford, Guy's; E. A. P. S. Rawlings, Charing Cross; S. H. Reeves, Birmingham; J. R. Rickett, Guy's; E. ap I. Rosser and A. de la C. Russian, St. Bart.'s; R. W. Sabonadiere, St. Thomas's; P. G. Salt, St. Bart.'s; J. E. Saville, St. Thomas's; Margaret P. Shackle, King's Coll.; C. W. Shaw, St. George's; N. L. Shepperd, King's Coll; L. Shillito, St. Thomas's; Clarice A. Skidmore, St. Mary's; Hilda W. Slack, Royal Free.; P. A. M. Soutter, Westminster; R. J. Steeds, Univ. Coll.; T. R. Stevens, St. Thomas's; Ivy E. Tanner, Royal Free; B. A. Taylor, Manchester; V. J. M. Taylor, Liverpool; H. S. Thomas, Melbourne and Middlesex; L. G. Thomas, Liverpool; E. C. Till, Guy's; S. L. Tunnicliffe, Liverpool; H. M. Turnbull, Charing Cross; H. L. Vaidya, London; J. A. Vernon, Guy's; A. D. Versteegh, St. Thomas's; A. J. Walsh, Liverpool; C. J. Waring, London; I. Waynik, Charing Cross; P. H. Whitaker, Liverpool; A. T. D. Whitfield, Birmingham; D. B. J. Wijeyesekera, Ceylon; Hannah E. Wilby, Royal Free; R. N. Wilcox, St. Thomas's; Gladys E. Wilkinson, Manchester; L. N. T. Williams, Liverpool; F. C. Wilson, King's Coll.; J. A. Wood, Sheffield; M. R. Zada, Middlesex; and R. A. Zeitlin, J. S. Zidel and H. D. R. Zscherpel, St. Bart.'s.

Pathology (New Regulations).—F. B. Mallinson, St. George's.

INSTITUTE OF HOSPITAL ALMONERS.—At a meeting to be held at the Grotrian Hall, Wigmore-street, London, on Thursday, May 26th, at 5 P.M., the subject of Hospital Social Service will be discussed by Dr. A. C. E. Gray, Sir John Rose Bradford, F.R.S., Sir Berkeley Moynihan, and Sir Arthur Stanley.

UNIVERSITY OF LONDON.—The first report of Mr. T. Franklin Sibly, D.Sc., as principal officer of the University, has just been issued. During the year 1926–27 the total number of candidates for all examinations was 33,220, as against 32,353 last year; the total number of successful candidates was 13,224, compared with 13,275 last year. Various benefactions and changes in the organisation of teaching are recorded; those referring to the medical schools have already been noted in our columns.

University College.—An address on Lord Lister and the Romance of Surgery will be given by Mr. Raymond Johnson in the Botanical Theatre of University College, on Monday, May 23rd, at 5.30 P.M. Dr. A. M. H. Gray will preside.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—Mrs. Christabel Burton has given £4000 to this medical school to found a scholarship in memory of her mother, Mrs. Geraldine Harmsworth, who died in August, 1925.

ROYAL SOCIETY OF ARTS.—On Wednesday, May 18th, at 8 P.M., an address on Industrial Welfare in Great Britain and the United States will be delivered by Mr. Robert R. Hyde, Director of the Industrial Welfare Society.

Dr. W. J. O'Donovan has been appointed physician in charge of the skin department of the London Hospital on the retirement of Dr. J. H. Sequeira, who has been appointed consulting physician.

Dr. Chisholm Williams, of Finchley, has been made an allowance of £120 a year by the trustees of the Carnegie Hero Fund. As a result of radiological work which continued from 1895 until last year Dr. Williams has lost his right hand and two fingers of his left hand.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—A meeting of this Association will be held at 11, Chandos-street, Cavendish-square, London, W.1, on Friday, May 20th, at 5 P.M. (tea 4.30 P.M.), when a discussion on Swimming Baths will be opened by Dr. J. Graham Forbes, Dr. F. W. Alexander, and Mr. F. E. Wilkinson.

GRANT TO QUEEN CHARLOTTE'S HOSPITAL.— The committee of this hospital, which, as we announced last week, is appealing for £250,000, has been informed that in recognition of the national importance and urgency of the task which it is undertaking, the Ministry of Health has sanctioned a special grant of £15,000 for the hospital's maternity and child welfare work.

ABERDEEN UNIVERSITY CLUB, LONDON.—The next bi-annual dinner will be held at the Piccadilly Hotel on May 26th at 7.30 P.M. Lord Cecil of Chelwood will take the chair and the guest of honour will be Mr. John Buchan, M.P. Any graduates of the University, men or women, who wish to attend the dinner or join the club are asked to communicate with Dr. Anstruther Milligan at 11, Upper Brook-street, W. 1.

RONTGEN SOCIETY.—The annual general meeting will be held on Tuesday, May 17th, at 8.15 P.M., in the British Institute of Radiology, 32, Welbeck-street, London, W., when Dr. R. G. Canti will describe an investigation into the effects of beta and gamma radiation on normal and malignant tissue cells growing in vitro, by means of the cinematograph, with demonstrations, and Prof. J. A. Crowther will give an analysis of some observations on the action of X rays on drosophila eggs.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The 97th annual meeting is to be held at Leeds from August 31st to Sept. 7th under the presidency of Sir Arthur Keith, F.R.S., the subject of whose address will be Darwin's Theory of Man's Descent as it Stands To-day. Particulars of the programme may be had from the Secretary of the Association at Burlington House, London, W. 1.

INSTITUTE OF PSYCHO-ANALYSIS. — On Friday evenings at 8.30 P.M. Dr. Ernest Jones is giving a series of lectures at the London Clinic of Psycho-Analysis, 36, Gloucester-place, W.1, on the Relation Between Psycho-Analysis and General Medicine. It is proposed to devote from half to three-quarters of an hour to discussion and questions at the close of each lecture. The fee for the course will be 30*s.* to medical practitioners, or 15*s.* to medical students, and tickets may be got from the Hon. Sec., Dr. John Rickman, at the Clinic.

LEBANON HOSPITAL FOR MENTAL DISEASES.—The twenty-eighth annual meeting of this hospital will be held at Friends House, Euston-road (opposite Euston Station), London, on Thursday, May 19th, at 3.15 P.M. (tea at 4.30). Dr. E. W. G. Masterman will preside, and Dr. H. Watson Smith, director of the hospital, will personally present his report on the year's working. Amongst the other speakers will be Major J. W. Mackinnon, R.A.M.C., Dr. Francis Edwards, and Lieut.-Colonel H. G. L. Wortabet, I.M.S. All who are interested are invited to attend. The general secretary of the hospital is Miss Hilda Fox, and the London Office is at 139, Marylebone-road, W. 1.

SOCIETY OF MEDICAL OFFICERS OF HEALTH. A meeting of the Maternity and Child Welfare Group of this society will be held at the Shoreditch Model Welfare Centre, 210, Kingsland-road, on Wednesday afternoon, May 18th, when cases will be shown by the medical officers of the Shoreditch Maternity and Child Welfare Department. The meeting will begin with tea at 4.30 P.M., after which cases will be shown. At 5.45 P.M. Dr. Glen Davison will read a paper entitled the Newcastle-upon-Tyne Caloric Percentage Method of Dieting the Premature and the Sick Infant.

THE new Science School attached to Clifton College will be opened on Thursday, June 2nd, by the Prince of Wales.

Sir David James Galloway, M.D. Edin., has been reappointed an unofficial member of the Executive Council of the Straits Settlements.

KENT COUNTY MENTAL HOSPITAL.—On Tuesday, June 7th, at 2.30 P.M., Princess Mary Viscountess Lascelles will open the nurses' home at this hospital at Maidstone.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—At a meeting to be held at the Miller General Hospital, Greenwich, to-day (Friday), May 13th, at 8.45 P.M., Dr. H. Nockolds will give a presidential address on the Poor-law Hospital and its Relation to General Practice.

THE MEDICAL PRAYER UNION.—The annual medical missionary breakfast of the Medical Prayer Union will be held on Wednesday, May 18th, at the Refectory, University College, Gower-street, W.C. 1, at 8 A.M., under the presidency of Dame Mary Scharlieb. An address will be given by Dr. Katherine Harbord of Jaunpur, India. An intimation of intention to be present will be welcomed by the hon. secretary, Dr. Tom Jays, Livingstone College, Leyton, E. 10.

BEDS FOR RHEUMATIC CHILDREN IN LONDON. Under the arrangement made between the Metropolitan Asylums Board and the London County Council, beds are now available at Queen Mary's Hospital, Carshalton, and Highwood Hospital, Brentwood, for the accommodation of children under 16 years of age who are suffering from acute rheumatic fever, subacute rheumatism, the later stages of acute rheumatism, rheumatic chorea and rheumatic carditis, including recurrent attacks. Medical practitioners who desire to recommend child patients for admission should communicate with the School Medical Officer, County Hall, London, S.E. 1, giving particulars of the cases. The accommodation is reserved for children resident in the County of London.

RUTHERFORD MORISON TESTIMONIAL FUND.—This fund shows a final available balance of £1206, after the payment for the portrait of Prof. Morison and sundry incidental expenses have been met. This sum has been handed over to the council of the University of Durham College of Medicine, as trustees, to administer the Rutherford Morison Travelling Scholarship, which was the purpose selected by Prof. Rutherford Morison for the balance of the fund. Prof. Morison desired that the scholarship should be available for candidates proposing to take the degree of Doctor of Surgery (D.Ch.) in the University of Durham, and particularly to enable such candidate to undertake six months' surgical study abroad. Each scholarship is to consist of the accumulated annual income of the trust fund for three years, the first award to be in 1929.

The nominating board for the scholarship is to consist of the Professors of Surgery, Anatomy, Physiology, Pathology, and Bacteriology for the time being in the University of Durham College of Medicine, and one member of the Honorary Medical and Surgical Staff of the Royal Victoria Infirmary.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—On Tuesday, May 17th, at 10 A.M., Dr. B. T. Parsons-Smith will give a special demonstration at the National Hospital for Diseases of the Heart; on Thursday, May 19th, at 1 P.M., Mr. Maurice Whiting will give a special demonstration at the Royal London Ophthalmic Hospital; and on Friday, May 20th, at 2 P.M., Mr. Maynard Smith will give a surgical demonstration at St. Mary's Hospital. These demonstrations are open to members of the medical profession without fee. From May 16th to 28th a special course will be held at the Infants Hospital under the direction of Dr. Eric Pritchard. This course will be of particular interest to the infant welfare worker. For the general practitioner the Hampstead General Hospital staff will undertake a course from 4.30 to 6 P.M. for two weeks from May 16th. A ten weeks' course in neurology began on May 9th at the National Hospital, Queen-square; it is divided into three parts, any of which may be taken. The Fellowship can arrange for practical courses in anæsthetics and obstetrics, and also make arrangements for clinical assistantships in gynæcology. During June there will be special courses in Diseases of the Chest at the City of London Hospital for Diseases of the Heart and Lungs (Victoria Park), Diseases of Children at the Children's Clinic; Gynæcology at the Chelsea Hospital, and Ophthalmology at the Central London Ophthalmic Hospital. The Fellowship also provides a general course at the associated hospitals. Copies of all syllabuses and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

ON Monday next, at 8 P.M., Mr. Lionel G. Pearson, F.R.I.B.A., will read a paper before the Royal Institute of British Architects on the subject of Foreign Hospitals. The address of the Institute is 9, Conduit-street, London, W.1.

MILK-SUPPLY AT WORKINGTON.—According to Dr. R. W. Macpherson, medical officer of health for the Borough of Workington, tests of milk retailed in the borough revealed that 75 per cent. of the milk was dirty, the deposit in unsatisfactory samples consisting mostly of cow dung, hairs, and dirt.

STOBHILL HOSPITAL, GLASGOW.—The Glasgow Parish Council continue to develop this institution on the lines of a fully equipped modern hospital. At an estimated cost of about £40,000 a medico-electrical department is in course of being provided. This department, when completed, will supply the latest developments for the treatment of diseases by means of electricity.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—A quarterly meeting of the College was held on May 3rd, Dr. G. M. Robertson, the President, in the chair. Dr. John Robert Lord and Dr. William Bell were introduced and took their seats as Fellows of the College, and Dr. Walter Duncanson Chambers was elected to the Fellowship.

The following were elected members of the College: Arthur Mills, Harold Edward Whittingham, Ram Swarup Gupta, James Davidson, James Alexander Law Loudon, William Lindsay Kinnear, and Raymond Leopold Albert Kitchen.

Dr. R. A. Fleming was nominated a representative on the Conjoint Committee of Management of the Triple Qualification. The Parkin Prize was awarded to Dr. J. D. Comrie. The Freeland Barbour Fellowship was awarded to Dr. T. R. R. Todd.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, May 17th.—5.30 P.M., GENERAL MEETING OF FELLOWS. Ballot for election to the Fellowship.

WEDNESDAY.—5 P.M., HISTORY OF MEDICINE. Annual General Meeting: Election of Officers and Council. *Papers:* Mr. J. Leveen: Shabbethai Donnolo. Dr. R. W. Innes Smith: An Unpublished Letter of John Fothergill.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.). Annual General Meeting; Election of Officers and Council. Cases: Dr. H. W. Barber: Prurigo Nodularis. Other cases will be shown. *Paper:* Dr. Louis Savatard (Manchester): Ichthyoses and Cancer of the Skin with Special Reference to Mule Spinners' Cancer.

FRIDAY.—8 P.M., OBSTETRICS AND GYNÆCOLOGY. Annual General Meeting: Election of Officers and Council. *Specimens:* Mr. L. G. Phillips: Spontaneous Separation of the Cervix during Labour. Mr. Everard Williams: (1) Uterine Sarcoma; (2) Repeated Tubal Pregnancy. *Paper:* Mr. A. S. Parkes: The Internal Secretions of the Ovary. Prof. Beckwith Whitehouse will speak. 7 P.M., ELECTRO-THERAPEUTICS. Annual General Meeting: Election of Officers and Council.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

THURSDAY, May 19th. — 8.15 P.M., Demonstrations at 7.15 P.M., Debate on the Organisation of Medical Research in the Tropics. Opened by Dr. A. T. Stanton, Chief Medical Adviser to the Secretary of State for the Colonies: followed by Prof. Warrington Yorke, of Liverpool.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, May 16th, to SATURDAY, May 21st.—FELLOWSHIP OF MEDICINE. Tues., 10 A.M., Dr. B. T. Parsons-Smith: Demonstration at the National Hospital for Diseases of the Heart. Thurs., 1 P.M., Mr. M. Whiting: Demonstration at the Royal London Ophthalmic Hospital. Fri., 2 P.M., Mr. Maynard Smith: Demonstration at St. Mary's Hospital. These demonstrations are free to members of the medical profession.—ALL SAINTS' HOSPITAL, Vauxhall Bridge-road, S.W. Afternoons and evenings, demonstrations, including cystoscopies and lectures.—LONDON SCHOOL OF TROPICAL MEDICINE, Endsleigh-gardens, N.W. Tues., Dr. Manson-Bahr. Thurs., 2 P.M., Dr. Low: Lecture-demonstrations.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Wed., 5 P.M., demonstration by Prof. McIlroy. 5.15 P.M., lecture-demonstration by Dr.

Heald.—CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C. Intensive course. LONDON LOCK HOSPITAL, Dean-street, W. Clinical course of instruction throughout the month.—MAUDSLEY HOSPITAL, Denmark Hill, S.E. Special course continuing throughout the month in Psychological Medicine.—INFANTS HOSPITAL, Vincent-square, S.W. Afternoon course. Special lectures and demonstrations. HAMPSTEAD GENERAL HOSPITAL, Haverstock Hill, N.W. Special course for General Practitioners 4.30 to 6 P.M. Medicine, surgery, and the specialties. Further information from the Secretary.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, May 16th.—2 P.M., Medical Cases in the Wards. 2.30 P.M. to 5 P.M., Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 P.M. to 5 P.M., Medical, Surgical, Throat, Nose, and Ear Clinics. Operations.
WEDNESDAY.—2.30 P.M. to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinic. 2.30 P.M. to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose, and Ear Clinics. 2.30 P.M. to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations. 4.30 P.M., Special Demonstration on Selected Cases of Nerve Diseases by Dr. L. R. Yealland.

KING'S COLLEGE, Strand, W.C.
TUESDAY, May 17th.—5 P.M., Prof. R. J. S. McDowall: Autonomic Nervous System. (Third of four free lectures.)

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, Hunter-street, W.C.
MONDAY, May 23rd.—5.30 P.M., Prof. H. Beckwith Whitehouse: The Menstrual Function. (Second of three free lectures.)

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
TUESDAY, May 17th.—3.15 P.M., Dr. W. R. Reynell: Demonstration of Medical Cases.

INSTITUTE OF PATHOLOGY AND RESEARCH, St. Mary's Hospital, W.
THURSDAY, May 19th.—5 P.M., Lt.-Col. S. P. James, (I.M.S. retd.): Some Methods and Problems of Malaria Research.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, May 17th.—5 P.M., Dr. H. MacCormac: Treatment of Syphilis (1).
THURSDAY, 5 P.M., Dr. K. N. G. Bailey: Pathology Demonstration.

LONDON HOSPITAL MEDICAL COLLEGE, Mile End, E.
THURSDAY, May 19th.—4.15 P.M., Prof. Knud Faber: Gastritis: Its Relation to Achylia and Ulcer (Schorstein Lecture).

UNIVERSITY COLLEGE, Gower-street, W.C.
TUESDAY, May 17th.—5.30 P.M., Mr. W. H. McLean (late Sudan Government Services): National, Regional and Town Development Planning.

MIDDLESEX HOSPITAL MEDICAL SCHOOL, Berners-street, W.
MONDAY, May 16th.—5 P.M., Mr. John Fraser: Some Surgical Problems.
TUESDAY.—5 P.M. (Second lecture).
WEDNESDAY.—5 P.M. (Last lecture).

GUY'S HOSPITAL MEDICAL SCHOOL, London Bridge, S.E.
FRIDAY, May 20th.—5.30 P.M., Prof. E. H Kettle: Inflammation and Infection. (First of four free lectures.)

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, May 17th.—4.15 P.M., Dr. D. Dougal: New Methods in the Investigation of Sterility.
FRIDAY.—4.15 P.M., Mr. A. H. Burgess: Demonstration of Surgical Cases.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
TUESDAY, May 17th.—3.30 P.M. (at the Jessop Hospital). Mr. King: Bleeding at the Menopause and After.
FRIDAY.—3.30 P.M. (at the Royal Infirmary). Mr. Cuff: Clinical Cases.

Appointments.

DURBRIDGE, H., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Matlock District of the County of Derby.

Vacancies.

For further information refer to the advertisement columns.

Birmingham University.—Asst. Lecturer in Physiological Dept. £300.
Bolton Infirmary and Dispensary.—Two H.S.'s. £150. Also Asst. H.S. £100.
Bolton Union, Townleys Hospital, Farnworth.—Second Asst. M.O. £225.
Bristol, Southmead Hospital.—Consultant for Ear, Nose and Throat Dis. £100.
Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.
Evelina Hospital for Children, Southwark, S.E.—H.P. At rate of £120.
Gt. Yarmouth General Hospital.—H.S. £150.
Hampstead, General and North-West London Hospital, Haverstock Hill, N.W.—Phys. to Out-patients.
Hospital for Sick Children, Great Ormond-street, W.C.—R.M.O for Branch Hospital, Tadworth Court, Walton Heath Surrey. At rate of £250.
Keighley and District, Victoria Hospital.—Res. M.O. At rate of £180.
Lambeth, Metropolitan Borough of.—M.O.H. £1400.
Leeds, Jewish Herzl-Moser Hospital.—Res. M.O. £50.
Liverpool and District Hospital for Diseases of the Heart.—Hon. Asst. Phys.
London Jewish Hospital, Stepney Green, E.—Res. M.O. Also Jun. Res. M.O. At rate of £150 and £100 respectively.
Manchester, Northern Hospital for Women and Children, Cheetham Hill-road.—Sen. and Jun. H.S.'s. £130 and £100 respectively.
Manchester Royal Infirmary.—Dickinson Surgery Scholarship. £75. Also Hon. Asst. Aural Surg.
Middlesex Hospital, Ferens Institute of Otolaryngology.—Bernhard Baron Research Studentship. £300.
Miller General Hospital for South-East London Greenwich-road, S.E.—Anæsthetist. 52 guineas.
Newark Hospital.—Res. H. S. £200.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Hon. Asst. S.
Nordrach on Dee Sanatorium, Banchory.—Asst. Res. M.O. £500
Queen's Hospital for Children, Hackney-road, E.—Cas. O. At rate of £100.
Royal College of Surgeons of England.—Professors and Lecturers.
Royal Free Hospital, Gray's Inn-road, W.C.—H. Surgs., H.P.'s., Cas. O., &c. Each £100. Also Asst. Surg. to Ear, Nose, and Throat Dept.
Royal Naval Dental Service.—Dental Officers.
St. Bartholomew's Hospital.—Asst. Dental Surg.
St. John's Hospital, Lewisham, S.E.—Phys. to Skin Dept.
St. Mary Abbots Hospital, Kensington.—Res. Med. Secy. £300. Also Asst. M.O. £250.
Salisbury General Infirmary.—Pathologist and Bacteriologist. £500. Also Hon. Asst. Surg.
Truro, Royal Cornwall Infirmary.—H.S. £170.
University College Hospital, Gower-street, W.C.—Surg. for Genito-Urinary Dis.
Ware Park Sanatorium, near Ware, Herts.—Asst. M.O. £350.
West Ham County Borough, Plaistow Fever Hospital.—Second Asst. M.O. £300.
West London Hospital, Hammersmith-road, W.—Aural and Ophthalmic H.S. and Asst. Res. Cas. O. At rate of £100.
West Riding Mental Hospital, Menston, near Leeds.—Jun. Grade Asst. M.O. £400
Wigan Infirmary.—Third H.S. At rate of £150.

The Chief Inspector of Factories announces a vacant appointment for a certifying Factory Surgeon at Sheerness, Kent.

Births, Marriages, and Deaths.

BIRTHS.

LANGWILL.—On May 5th, at Marloes-road, Kensington, W., the wife of Archibald Langwill, M.D., F.R.C.S.E., of a daughter.

TOTHILL.—On May 2nd, at Caa-an-righ, Leigh-on-Sea, the wife of Dr. Henry Tothill, of a son.

WALTON.—On May 3rd, the wife of John Walker Walton, F.G.S., L.D.S. Eng., Tower House, 16, Manor-road, Folkestone, of a son.

MARRIAGES.

BABINGTON—WATTS.—On May 7th, 1927, at St. Paul's Church, Cliftonville, Margate, by the Rev. Herbert Pegg, Vicar, Major J. W. H. Babington, M.D., I.M.S. (retd.), to Gladys Mary Joan Watts, M.B., B.S., daughter of the late Lieutenant-Colonel J. L. Watts, R.E., 25, Cornwall-gardens, Cliftonville.

DIX—VERNON.—On Thursday, May 5th, at the Church of St. Mary the Virgin, East Barnet, by the Rev. F. A. Overton, Victor W. Dix, F.R.C.S., to Nan, youngest daughter of Mr. and Mrs. W. A. Vernon, of Bohun Lodge, East Barnet.

DEATHS.

BROWN.—On May 8th, at "Holmlands," Mornington-road, Leytonstone, Henry Havelock Brown, M.B., C.M., aged 69.

DE LA COUR.—On May 8th, at St. Leonards-on-Sea, after a short illness, George Francis de la Cour, M.D. Edin., M.R.C.S., L.R.C.P., in his 84th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

PALESTINE AND THE PUBLIC HEALTH.

THE annual report for 1925 of the Health Department of Palestine and Transjordan is of considerable interest, for during the last six years a model administration has been built up under the direction of Col. G. W. Heron. The budget of the department for the year was only £90,000, so that it was necessary to exercise rigid economy. The staff included eight British and 40 Palestinian medical officers who are able to devote the greater part of their energies to public health work owing to the fact that numerous voluntary and charitable institutions coöperate satisfactorily with the administration.

It is evident from the report that the public health has been good. An Anti-Malaria Commission of the League of Nations, which visited Palestine in the spring, formed a favourable impression of the work already carried out in the country. In spite of the disturbed situation beyond the northern frontier, and the entry into Palestine of several thousand refugees from Syria, public security was well maintained, and there is a satisfactory decrease in highway robbery and other heinous crimes. Progress has been made in the conservation of monuments of archæological interest in Palestine and Transjordan, and several excavation parties are at work. The most sensational find of the year was a skull of Neanderthal type and other remains of primitive man, which were discovered near Tabgha, on Lake Tiberias, by the British School of Archæology.

The non-technical services of all Government hospitals, except at Jerusalem and Haifa, are now in the hands of local committees; this system of devolution has, so far, proved successful. Voluntary hospitals dealt with more than 26,000 in-patients. Jewish medical organisations, notably the Hadassah and the Kupat Holim (Workmen's Sick Fund) performed much useful service. The Scottish Mission Hospital, Tiberias, rendered valuable assistance in treating Druze refugees from Syria. The natural increase in population in Palestine by excess of births over deaths was more than 16,000; but the infantile mortality-rate remains at the high figure of about 180 per 1000. Maternity and infant welfare centres, of which the number is now increasing, established in most towns, are helping to bring about its reduction. There was no serious epidemic in 1925, and no case of plague, cholera, or small-pox. Measles was less prevalent than in 1924, but still accounted for the greatest number of deaths. 700 cases of typhoid and paratyphoid fevers were notified, mainly among recent immigrants, with 60 deaths; this abnormal incidence is attributable partly to the water shortage in the Jerusalem district, where the spring supply had to be supplemented by daily train-loads of water from Lydda. Measures to check the spread of tuberculosis are being concerted by the Government and voluntary organisations.

Further progress is recorded in the drainage of swamps and other land-reclamation works, and the malaria incidence continues to decline. Further epidemiological studies were made, and it was noted that in the coastal area there was only one epidemic period, June, July, and August, and that the type was mainly benign tertian. In the inland plains, however, there are two epidemic seasons, summer and autumn. As the result of control measures, the summer epidemics of benign tertian malaria have become negligible during the past few years, and the main outbreak has been of malignant tertian malaria in the autumn. Important details as regards the species and habits of anopheles have been worked out. The range of flight of Palestinian anopheles has been shown to be 1½ to 2 kilometres, and under certain conditions dispersion may extend to three or more kilometres; whilst during what may be termed the "hibernation flight," anopheles may invade areas 6 or 7 kilometres from their breeding point, and there is some evidence that outbreaks may follow such invasions. The League of Nations Commission recommended (*a*) systemic treatment of carriers, and (*b*) destruction of adult mosquitoes. The former recommendation is an impossible one on account of the cost which works out at 11*s.* 7½*d.* per head for quinine, and 6*s.* per head for staff; while with regard to the destruction of adult mosquitoes, when tried experimentally, only in a few places did a certain amount of success appear to result.

The facilities for treatment of trachoma and other diseases of the eye have been still further developed in close cöoperation with the Ophthalmic Hospital of St. John of Jerusalem. Medical officers of the Government and nurses are trained there, and are sent out to various districts to conduct ophthalmic clinics in the government hospitals and dispensaries, under supervision. It is stated that "since the inception of the scheme nine medical officers have received training, and some of them additional courses. In operative work they perform at least 50 trichiasis operations under supervision and are trained to assist at intraocular operations. They are given a working acquaintance with the prescribing of spectacles, with special reference to the type of case to refer to the visiting surgeon, and with the more obvious conditions demonstrable with the ophthalmoscope. Daily they receive practical instruction in the management of a clinic and the application of treatment. In the devising of this curriculum, especially in the recognition of the imperative need of standardising operative procedures and methods of treatment, I am indebted to the monumental work of MacCallan in Egypt." The more serious cases at the ophthalmic clinics in the districts are kept for operation by the visiting ophthalmic surgeon from Jerusalem, or, if necessary, sent to him at the Hospital of St. John. Ophthalmic treatment is given in the schools for trachoma and acute conjunctival diseases by the school nurse or medical orderly by means of drops, and a record of the progress of each case is kept on a special ophthalmic card by the school medical officer. Sixty-nine per cent. of the pupils suffer from trachoma.

Owing to the war between Nejd and Hejaz, the Mecca pilgrimage from and through Palestine was suspended. There were 481 doctors in Palestine at the end of 1924, and more than 130 arrived in 1925. On the accession of Palestine to the International Opium Convention, an Ordinance was promulgated to control trafficking in opium, morphine, cocaine, &c., 14,672 grammes of opium, 1015 of morphine, 166 of heroin, 154 of pantopon, 3657 of cocaine, and 355 of cannabis indica (extract) were imported under permit. In the Government laboratories 23,000 routine examinations were made: the chemical laboratory has dealt specially with the composition of staple foods and with criminal investigation, and the bacteriological laboratory furnished all necessary antirabic, calf lymph, cholera, and T.A.B. vaccines. Nearly 1000 persons received treatment against rabies, of which there is no abatement among dogs and other animals, and 182,000 doses of calf lymph vaccine were issued.

Jewish immigrants numbering 33,831 entered Palestine during the year, of whom 16,893 came from Poland, 6529 from Russia, 2166 from Roumania, 1747 from Lithuania, 963 from Germany, 749 from Turkey, 723 from Bulgaria, 570 from the United States of America, 460 from Latvia, 427 from Austria, and smaller numbers from various parts of the world. This Jewish immigration, which was nearly three times as large as that of 1924, whilst unquestionably conferring benefits has introduced new problems. The ready absorption into the economic life of so small and unproductive a country of men and women of various types, tastes, and capacities is a difficult matter, which has required all the energy and resources of the Zionist Organisation to deal with satisfactorily. A number of these immigrants would like to become farmers, and the ratio of Jewish rural to urban settlement tends to increase, but agricultural settlement is a slow and costly process. As the result a large proportion of immigrants gravitate to the principal towns, and are dependent for their livelihood on commercial and industrial enterprises.

FIRST INTERNATIONAL CONGRESS OF RADIOLOGY.

THE proceedings of the Section of Physics of the first International Congress of Radiology, which was held in London in 1925, are published in the April issue of the *British Journal of Radiology* (Rontgen Society Section). This issue contains the opening speeches of the Duke of Connaught, Mr. Neville Chamberlain, and Sir Humphry Rolleston, together with numerous papers. Copies may be had from Mr. Geoffrey Pearce at 33, Newton-street, London, W.C. 2 (price 15*s.* net, plus 6*d.* postage). The second International Congress of Radiology will be held at Stockholm in 1928.

ACCESSORY LOBES OF LIVER.

Dr. Thomas Cullen, when operating on an abdominal patient in 1924, was surprised to find a small piece of liver tissue lying on the surface of the gall-bladder. Intrigued by this, he subsequently began to search the literature concerning hepatic abnormalities, and published the results in the *Archives of Surgery* for November, 1925. The American Medical Association has now republished this paper in book form, and anyone who is interested in the question, or is writing up an account of some abnormality of the liver, may be recommended to get it, for it is interesting reading and gives a full list of references. The anomaly met with by Dr. Cullen appears to be exceedingly rare; liver abnormalities are in general very uncommon in man, although less so in some of the lower animals. Some of Dr. Cullen's figures are reminiscent of the livers pictured by the anatomists of the Middle Ages, Hundt, for example, or Vesalius in his younger days. Developmental freaks of this variety are of more interest to the curious than importance to the clinician.

NATIONAL BABY WEEK COUNCIL.

THE annual report for 1926 records a busy year in the Council's various departments. The demand for films was nearly three times as great as in the previous year; competitions for teachers and school-children attracted 1500 entries, as compared with 600 in 1925, and the requests for help in organising local campaigns was larger than at any time since the war. An important sign of the Council's influence is seen in the fact that its regulations for the conduct of baby shows and competitions, which insist on the judges being medical practitioners, are being more and more widely adopted. The fourth English speaking conference, held at the Caxton Hall in July, was the principal feature of the London celebration of Baby Week, and served to focus attention on special topics selected for discussion. During the week, through the courtesy of the Royal Society of Medicine, a display of propaganda films was given in the Barnes Hall. The subjects chosen by the Council this year for particular emphasis are:—

(1) Atmospheric Pollution in Relation to Maternity and Child Welfare.

(2) Development of Dental Clinics and Dental Care for Mothers and for Children under Five.

(3) The Home in Relation to Maternity and Child Welfare.

A silver challenge shield for the best Baby Week campaign, to be competed for by any part of the Empire except the British Isles, has been presented by the *News of the World*. The Astor shield was won in 1926 by Northampton, and the William Hardy shield, for areas with a population not exceeding 10,000, by Halesowen. The *Daily News*, which last year gave prizes for the greatest percentage reduction in neonatal mortality in districts with a population of not less than 50,000, is this year offering similar awards for the most efficient infant welfare centres, the judging to be carried out by the Baby Week Council. The Council itself is again holding competitions for teachers and school-children, particulars of which will be announced during Baby Week, to be celebrated, as usual, in the first week of July.

ELECTRARGOL IN PANDEMIC INFLUENZA.

WRITING in a recent issue (March 13th, 1927) of the *Concours Médical*, Dr. Gidon points out that the key to the polymorphism of the secondary reactions of the influenza patient is found in the diminution or suppression of the specific defensive secretions, so that the specific immunity of the organism may be temporarily annihilated by the toxin. Hence he urges the value of non-specific anti-infective medication, such as the intravenous administration of collargol or electrargol; with the latter he has obtained very satisfactory and constant results. He maintains that these are not wholly due to shock, but mainly to selective fixation of the product in the star-cells of Kuppfer in the liver, where two-thirds of the silver is retained. Extracts of liver six hours after electrargol injection have been shown by Duhamel to have quadrupled the organ's anti-streptococcic power, whether the drug is introduced intravenously or intramuscularly. The method appears to have a sounder pathological basis than many remedies advocated and is worthy of an extended trial if we are again visited by a serious epidemic of influenza.

DIETETIC PRINCIPLES.

PREVIOUS pamphlets issued by the Health Service Bureau of the Wesleyan and General Assurance Society, Birmingham, have been favourably commented upon in these columns, and a recent set of four on the whys and hows of diet reach the same high standard of accuracy and simplicity. No. 1 is introductory and lays down certain general principles; by itself it may be a little bewildering, but it is presumed that the four pamphlets are issued together. Next follow two on what our foodstuffs consist of. Proteins, fats, carbohydrates, and roughage are dealt with in the first of these, and salts, water, and vitamins in the second. Rather too much space is spent on salts, and it is surely inaccurate to say that "rickets is due to a deficiency of calcium," particularly when oatmeal is mentioned in the next line as a source of this metal. There are certain forms of diet sometimes given to children in which the more oatmeal added the worse the rickets produced. The fourth pamphlet is entitled "a square meal," and the familiar diagram, first devised by Prof. Plimmer, is reproduced without acknowledgment, a page of explanation being added. The points here criticised are the only ones to which exception can be taken, and they are mentioned because the Health Service Bureau has a reputation for attention to detail which it is hoped it will maintain. Local authorities and others engaged in the task of educating the public in matters of health can be strongly advised to make use of these new pamphlets.

"THE COUNTRYMAN."

AN illustrated review makes its appearance this week, published by J. W. Robertson Scott from Idbury, Kingham, Oxford, and entitled "The Countryman" (2*s*, 6*d*.). It is a quarterly publication, forming a miscellany dealing with country life and progress, and it is proposed in its pages to provide practical information in connexion with every department of rural welfare. In the first issue we find contributions from (among others) Lord Ernle, the late Minister of Agriculture, and Sir Daniel Hall, Chief Scientific Adviser, Ministry of Agriculture and Fisheries, and in subsequent numbers we are encouraged by the editor to expect similar brief but authoritative essays aiming to inform the increasing number of citizens who are striving for better conditions of rural life. It is recognised by the large number of doctors who practise in the country that an intelligent view of country life would be of great value to the nation, and we wish the new magazine good fortune.

BEARDLESS SURGEONS.

To the Editor of THE LANCET.

SIR,—In reference to the story of the burnt whisker in THE LANCET, April 30th, p. 955 I would remark that it was not the nurse, but the beardless surgeon who, after a sigh of concern said: "Let us spray!" As stated under the "Beardless Vogue," I am still of opinion that the general order for the shorn face followed on the cult of Listerism; the technique of that system in 1881 was by no means perfect, however, as many operating surgeons—including Lister—wore whiskers, and others beards; and equally the ideals of ritual in aseptics later were difficult of attainment, as the following incident will show: Sole visitor to a provincial hospital in 1923, "well equipped in instruments, rubric, and fair linen," to see bone-plating by a London surgeon, I was bidden don overalls and rubber sandals, and stand on a floor flooded with antiseptics. After the play of a multipolar catherine wheel, with a herculean task before him, and the patient "under," the clean-shaven, unmasked surgeon began by describing a circle with his extended arm and saying: "Silence, touch me not!" Arduous and prolonged, the procedure became dramatic, when drilling and driving home the three tibial screws, *avec force majeure*, and perspiring freely, he himself broke the silence by calling for a 'kerchief and bidding me clear the dew-drops from his brow. It was summer time, when in four and a half months the plate was removed and in due course aseptics triumphed over "those pernicious beings whose anchor is the meanest particle of the inconstant air."

I am, Sir, yours faithfully,

Ealing, W., May 2nd, 1927. HERBERT A. SMITH.

MIDWIFERY AMONG THE POOR OF LONDON.

THE excellent results obtained, both in hospital and on the district, by the staff of the East End Mothers' Lying-In Home, are by now well known, and the report for the last two years, just issued, shows that they have in no way failed to maintain their own high standard. In a total of 4291 deliveries, all unselected cases, there was no instance of Cæsarean section or embryotomy; forceps were applied on 53 occasions only and 8 labours were induced. Of these all had normal puerperiums save one forceps case where there was a slight rise of temperature. Three babies died as a result of delivery—one an anencephalic and one a 28-weeks' child for which labour was induced because of bicornuate uterus and transverse presentation.

In the hospital there were 35 cases of maternal pyrexia, estimated on the B.M.A. standard. Of these 14 were due to general conditions and 8 to sapræmia. On the district there were but 13 morbid temperatures, only two of them being due to sapræmia. Even so these temperatures were down again in 48 hours except in one case of sapræmia and one of pleurisy. The rate of morbidity works out at 1·7 per cent. for the two years. The medical officer attributes the lower percentage on the district to the segregation of patients and the fact that primiparæ and bad cases would naturally be found in greater numbers in the hospital. So few were the cases of clinically contracted pelvis that no table is given to illustrate them. While improved midwifery no doubt partly accounts for this, it is also just about time that the reduction of deformities from rickets as a result of infant welfare work began to show itself among child-bearing women.

During the whole period under review there was only one case of eclampsia, in a primigravida who had suddenly developed albuminuria at the end of her time; she had a normal delivery. Two patients died in 1926 in hospital; one developed pelvic cellulitis after a difficult forceps delivery, whilst the other died after manual removal of the placenta. The babies do as well as the mothers; of the 1199 born in the hospital only 13 lost weight before discharge and 11 died. A maternal death-rate during ten years of 0·66 per 1000 in the slums of London constitutes a record that must be hard to beat.